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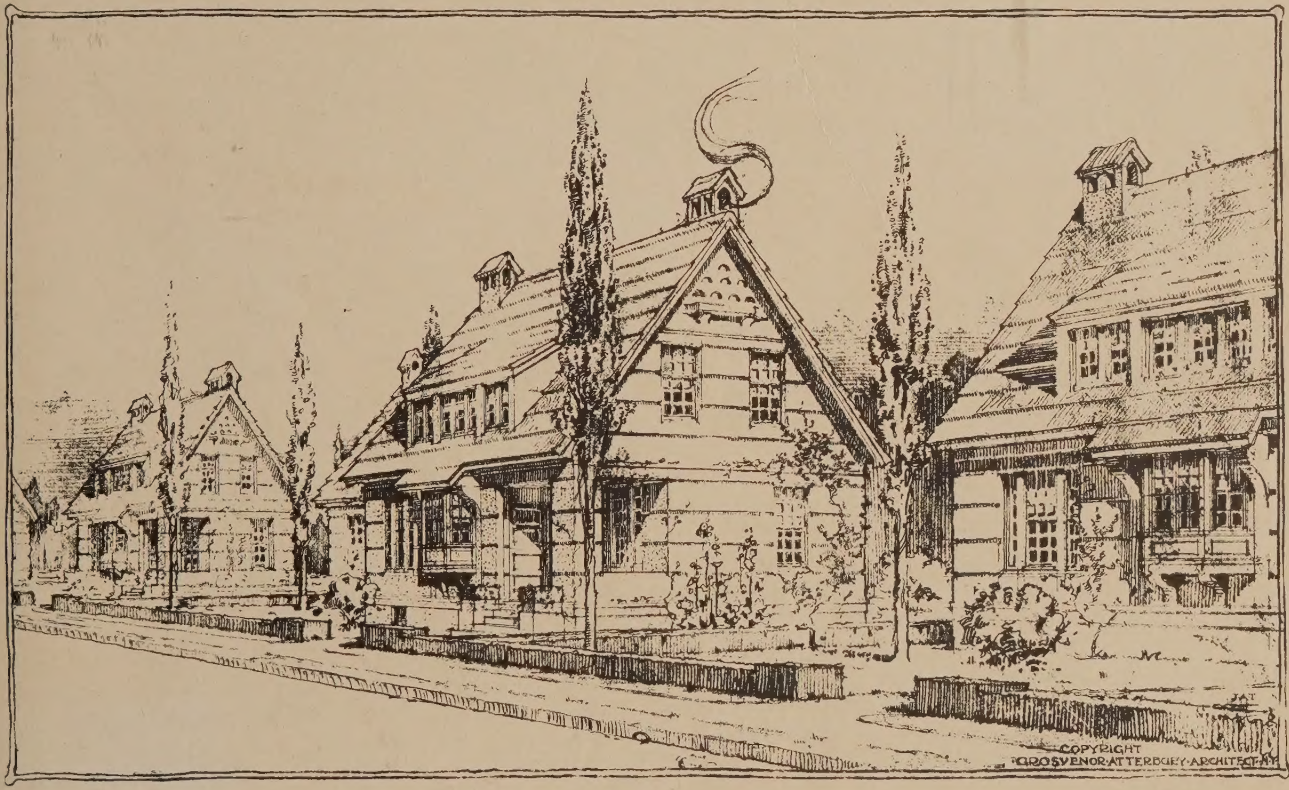
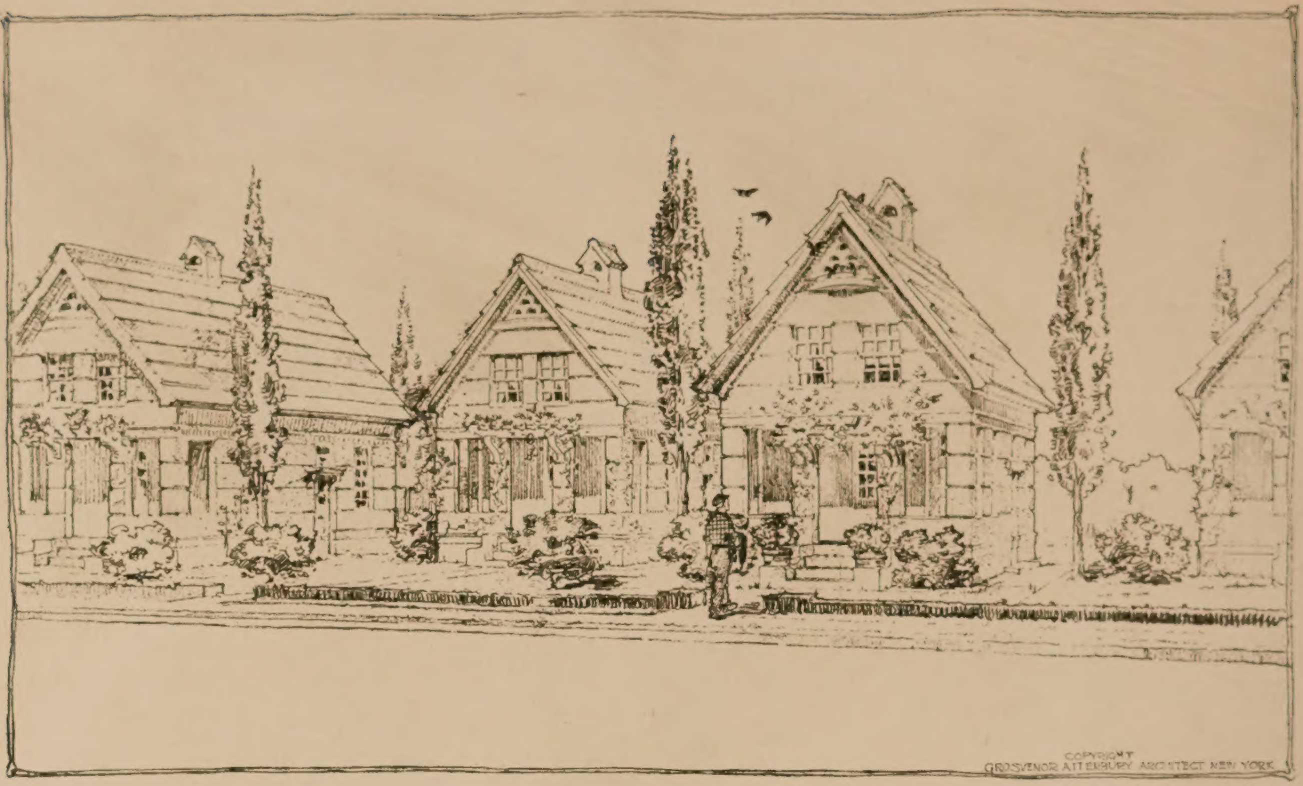


Industrial Housing

By Charles C. May

A HISTORY of Industrial Housing would show a gradual, comparatively featureless growth during the course of the nineteenth century and, up to a few years ago, during the twentieth. Since the beginning of the European war, however, what had been a steady, slow expansion of ideas has been transformed into a live question of the most pressing nature. In certain sections of the country the needs have become desperate; industrial concerns are struggling to find solutions for their problems or are forced into adopting emergency methods to meet abnormal demands, putting off until a less congested period a more sober consideration.

The experience of Bridgeport, Connecticut, is an extreme instance. Here we find 22,000 people flocking within two years into a city totally unprepared to absorb them. Competent estimators prophesy a further increase of 14,000 during the current year. In Detroit conditions have been only less congested. We hear of special week-end trains being run to St. Louis for the benefit of workers whose families could not follow in the shift of the wage earners. From a half dozen localities come similar reports. The condition is by no means confined to the cities. The same pressure exists in smaller communities, where the establishment of new industries has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A GROUP FOR DWELLINGS IN SINGLE UNITS.

brought an influx of population which has completely swamped existing accommodations. One town in eastern Tennessee has built some seven or eight hundred houses within the year, yet last October the open fields were dotted with tents of the two or three hundred families who had as yet no other shelter. Another town, not fifty miles distant, is forced to run commutation trains night and morning to transport workers, gratis, to a neighboring settlement where they have taken up temporary quarters in the summer hotel and its cottages. This makeshift must answer until the completion of fifty houses now under construction. For the moment these fifty will meet the demand, but unless all signs fail, the relief will be only momentary and this town, like its neighbor, will, in desperation, resort to a tent colony to house its industrial new comers.

Conditions like these cannot exist without a reaction. The worker has consented to endure such living conditions for the sake of the emergency wages he has commanded, but he is rendered entirely unstable in employment. His eye is constantly on the lookout for a further jacking up of his wages; his ear is ever open to the alluring promises of a competitor company. The immediate result is an abnormal rate of turnover in the industries most affected. Miss Tarbell, in her latest book, "New Ideals in Business," devotes a most interesting chapter to the question of "Steadying the Job." Her statistics on this matter of floaters in employment are startling. Careful investigations have shown that numerous large concerns have been hiring anywhere from three to six and one-half times as many men as were actually needed to take care of the increase in business; that companies moving along at an even pace are actually forced to replace more than their total average force, instead of the twenty out of a hundred who would normally be dropping out from inevitable wear and tear, from ordinary shifts in location and the various other elements that usually affect the employer's payroll.

The realization of these facts has come as a shock to employers and the immediate result has been to focus an immense amount of study upon this matter of "Steadying the Job." While results have more than repaid the study, one influence toward stability has as yet hardly been carried beyond the stage of experiment, viz., individual ownership of homes for employees. No one fails to recognize this as perhaps the most potent single factor looking toward permanence in employment, yet in calculation one never sees this element reduced to a monetary asset to the business. Suppose, for example, a concern employing 10,000 men, without adequate housing facilities, had found its tax, through shifting personnel, to amount to a charge of $40,000 against its payroll. Ignoring for the moment other factors, it is safe to assume that such a company, by providing wholesome living conditions for the men and giving them the possibility of ownership could eliminate at once 30% of this tax. If so, would it not be proper and good business for the company to write off a good share of this saving as a contribution toward its building program? All the more so since the collateral gains in improved spirit among employees, saving on the cost of breaking in new men, must amount to further substantial (if hard to compute) dividends.

Besides these more immediate returns from its housing investment, the company can assuredly count upon gains over a period of years through physical betterment among its employees in cutting down the time lost through sickness, lengthening the period of useful activity of the worker, improving the physique of the younger generation from which the ranks must be recruited. Such returns are not fanciful—they are actual and substantial. They have been testified to universally by men of broad experience in employing workers under both sorts of conditions. A few proprietors, mostly in England, have been willing to accept returns in these forms instead of cash, or better—they have been far-seeing enough to recognize these as cash returns in a modified form. They have accordingly entered upon and carried through their building projects on a basis well under the 5% generally regarded as the commercial minimum.

We must remember that the history of industrial housing on broad lines is, comparatively, a very short one. Reports that can be tabulated are only now beginning to come in, especially with reference to these more intangible elements of which we have been speaking. One of the chief difficulties in gaining public recognition of these truths lies in the length of time required to produce results that have any popular appeal. If, as has been testified, out of the 39,000 men who applied in 1915 for service in the U. S. Marine Corps, 89% were rejected for physical unfitness, we must seek the cause, not in the habits of these men during the month or the year previous, but we must look back to the living conditions that surrounded their own childhood and the childhood of their fathers and mothers before them. Until we have such an array of figures at hand that the man in the street can understand them, until the facts become a matter of commonest knowledge, we must expect that progress in industrial housing must be won at the price of special exertion in public education.

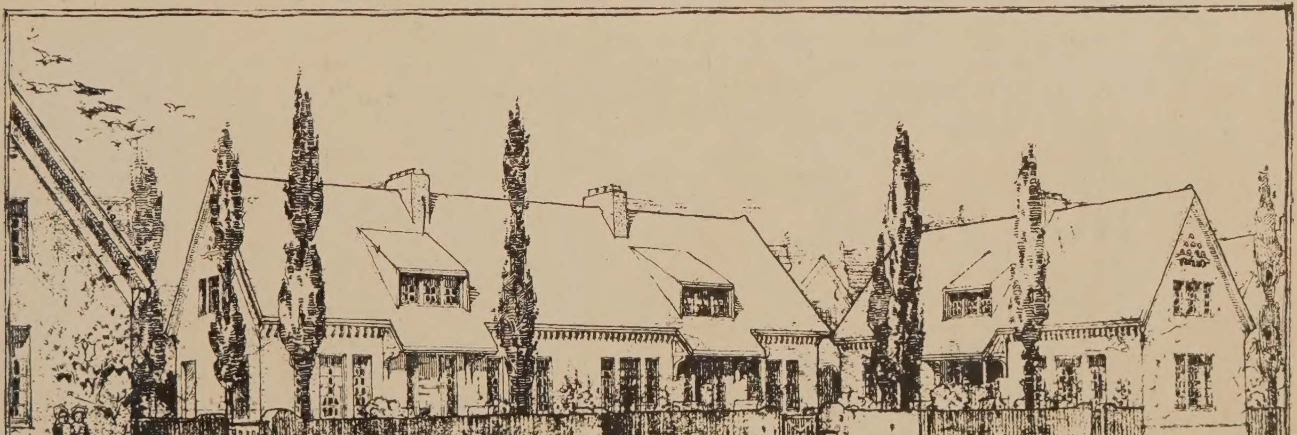
Slow as the process is, the signs of promise are everywhere apparent and those in closest touch with the situation are the most optimistic. Just as the hospitals are realizing that they cannot afford to cease caring for their patients upon discharge, but must keep track of the progress of their convalescence, just as the boards of education can no longer ignore their pupils' activities and living conditions outside of school hours, but must establish physical examinations and give instruction in personal hygiene, so employers of large groups of men are coming to understand that they cannot ignore the worker after he leaves the shop. They must watch his home life, they must put interest and system into his hours of recreation, they must provide incentives toward permanence, self-betterment and self-respect. And, like the hospital and the board of education, they are coming to realize that these enlargements of their province are inevitable—that they are essential elements in the carrying on of big business, and that the closest study in this department will, in the long run, bring returns just as surely as in the shop and in the office.

With regard to actual accomplishment, it must be admitted that no really satisfactory solution of the housing problem in its most acute, and therefore its most important form, has yet been presented. Everyone agrees that the solution, when it comes, must be along the lines of economics rather than philanthropics; in other words, that the solution must be based on sound commercial principles—it must pay. Among industrial towns already built in this country are some that provide excellently well for the higher paid mechanic and the skilled laborer; not one of them gives the final answer to the question of housing the unskilled laborer. That is to say, we have good houses for 10% of the army of employees, but the other 90% are still living under conditions that are partially or wholly bad. The dilemma of the housing of this nine-tenths has nowhere been more clearly expressed than by Dr. John Nolen, speaking before the National Housing Conference. "Consider," he says, "these four points and their relation to one another:—

"1—The minimum desirable house of four or five rooms cannot be provided in the United States, even under favorable conditions, for less than about $1,800 or $2,000; that is, for house and lot, with street improvements, essential public utilities, and neighborhood recreation.

"2—A house costing that sum cannot be offered on the basis of an economic rent of, say, 5% or 6% net, for less than $15 per month.

"3—Unless a wage-earner with a normal family of wife and three dependent children has an income of $15 a week, or $800 a year, he cannot afford to pay as much as $15 a month for the rent of his home.

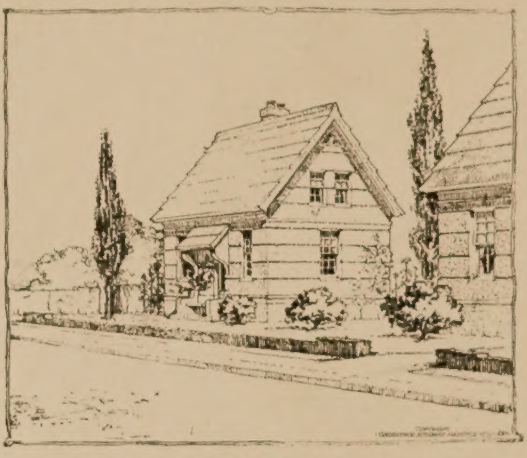


GROUP FOR SINGLE AND SEMI-DETACHED DWELLINGS.

"4—More than one-half of all workingmen earn less than $15 a week."

There seems no escape from the logic of these propositions, and yet Dr. Nolen believes it possible to produce a more favorable relation between the elements of the problem. He believes (and in this there is very general agreement among those who have studied the question most deeply) that the solution lies along the lines of collective action in every department that concerns the laborer's home. Beginning before the land is bought, action must anticipate the speculator and prevent inflation. In laying out the land, the best town-planning advice is required that the subdivision may take advantage of every possibility in topography, street layout, districting, transportation, park and playground reservations and grouping of individual and attached dwellings. In designing the houses, only the most careful study will produce a dwelling that can meet the requirements of space, light and air, convenience, economy and still avoid sacrifice of every element of attractiveness. In putting the dwellings on sale, the initial payment must be a minimum and the subsequent terms easier than could be obtained from a small or selfish operator.

Heretofore, the tendency has been to emphasize some one of these elements to the neglect of the others. Actually, it would seem that the balance as between success and failure is so delicate that the solution requires a favorable combination of *all* these elements and that failure in any single one may be sufficient to destroy the equilibrium. Eminent success in one or two departments is not enough.


DESIGN FOR WORKINGMAN'S COTTAGE.

To attain such a fortunate combination is a difficult accomplishment, yet each year sees it more nearly approached. In the handling of land for improvement in workingmen's houses, we note the formation of numerous housing corporations of large capital, offering the features of limited dividend and wholesale operation. In one or two instances the co-partnership principle is in practice, and we even hear brought up for serious consideration, municipal financing of housing activity. In the same way, with the physical layout of the housing group or community, the tremendous expansion of town planning speaks for itself. Even the general public is ceasing to regard town planners as visionary and to recognize them as men with vision. Industrial concerns no longer regard the town planner's commission as extravagant or superfluous. More than once a company that has actually embarked upon development for its workingmen has perceived that it had ventured beyond its depth and has had the courage to stop work and begin over again under competent advice. The case of one large company comes to mind where a whole town was constructed without technical assistance and with mediocre results. A few years later, when the same concern was ready to embark upon a second undertaking of the sort, they were quick to engage the services of a town planner as a preliminary to active work of any kind.

So, in the matter of sale and tenure, it has been recognized that restrictions are insurance to buyer no less than to seller and that expert legal advice is needed in formulation of articles applicable to particular cases.

In architectural design some of the outstanding figures in the profession are making the workingman's house an object of special study. While there is, theoretically, a tendency toward standardization of plan, it has not, as a matter of fact, progressed very far as yet. The prospect would seem to point to a series of standardized plans for various sections of the country rather than to a single ultimate solution. For it is never more true than in the workingman's house that a good plan is the expression of a given set of conditions.

Finally, in standardization of construction progress is being made in many directions. An instance in point is the system of Standardized Sectional Concrete Construction evolved by Grosvenor Atterbury, architect, of New York. Acting upon the theory that the workingman who wears a factory-made hat, a factory-made suit and a factory-made pair of shoes, should, for the same economic reasons, have a factory-made house, Mr. Atterbury has been pushing a study of standardization of building construction. Why, he argues should we expect to house the workingman in a custom-built house? When every other industry has long since abandoned hand work in small units for machine production in quantity, why should house construction still cling to the one-man building unit? From this as a starting point, Mr. Atterbury has sought a solution by decreasing the number of building units and increasing their size. Instead of laying a brick or nailing a board, the single operation in his system is the setting of a two or three-ton hollow concrete block which forms, with perhaps three others, the whole side of a house from floor to floor; or, it is the swinging into place of a six-ton slab which forms the ceiling of a whole room.

In his report, "More Houses for Bridgeport," Dr. Nolen has given a summarized description of the system as follows:

"The application of the standardizing principle was made on the basis of a concrete structure, on the theory that the building might be built up of large standardized units, cast in a factory with the aid of machinery at or near the building site. Such sections could be virtually completed with respect to all such items as ducts, chases and finish of surface, both inside and out, leaving the very minimum of labor to be performed after the actual assembling of the units.

"The noteworthy advantages of such a system lie in the natural adaption of construction and design, shop manufacture with its possibilities of standard economic conditions of all kinds, saving of wastage and independence of weather conditions, the application of the most efficient mechanical devices, and the readjustment of the building units (in this system the single sections are cast in the factory) with the object of reducing their number to the minimum and increasing their size to the maximum compatible with economy of design and handling.

"The use in construction of large concrete units is no new idea. For a number of years construction companies have been erecting bridges, warehouses, power plants, railroad stations, hotels, etc., by this method. It is now proposed to extend it to the low-cost house field, made possible by standardization and wholesale building operations. It would not be surprising if the result was an economic revolution in modern low-cost house building. Great economies in labor should be effected, and a decided reduction in the time required for house building."

II. Types of Construction

By DeWitt Clinton Pond, M. A.

Mr. Pond, so well known to our readers as the author of "Engineering for Architects," is now writing for ARCHITECTURE a series of articles on different types of construction dealing with the more elemental problems.

A SMALL GARAGE.

LET it be assumed that a builder has been selected to erect a one-car garage, for which an architect has furnished drawings and specifications. According to these drawings, as shown in Fig. 6, the outside dimensions of the garage will be 12 feet by 18 feet. The height to the under side of the plates will be 9 feet 4 inches, and the pitch of the roof will be 10 inches to the foot.

According to the specifications the builder sees that the garage is to be left unfinished on the inside with the studs and rafters exposed. There are detail drawings furnished of the doors and windows and the frames for them. The specifications also give the sizes of the timbers, and the first undertaking of the builder is to place his timber list with the nearby mills for competitive bids. In order to have the mills bid upon the same amount of timber the builder has to make out this list, in which the exact amount of timber is given. The list will look like the one given below.

Sills—4 x 4—2/18—2/12.
Plates—4 x 4—2/18—2/12.
Studs—2 x 4—50/9—7/12.
Rafters—2 x 6—30/9—1/18 (Ridge).
Sheathing—650 sq. ft. ⅞ x 8 shiplap.
Shingles—Roof and side walls—7,100 Perfection 18″ random.
Shingle lath—1 x 2—1,200 lineal feet.
Ceiling—⅞ x 6—100 lineal feet.
Ceiling—⅞ x 4—100 lineal feet.
Bed Mould—2-inch—100 lineal feet.
Crown Mould—3½-inch—100 lineal feet.
Doors—1 pair—4′ 6″ x 8′ 6″ each—as per detail.
Windows—2—3-part—2′ 7″ x 4′ 6″ sash and frames.
Windows—1—Single—2′ 7″ x 4″ 6′ sash and frames.
Building Paper—1 roll of 500, 2 rolls 100 square feet each.
Cement—14 barrels.
Sand—14 cu. yds.
Gravel—14 cu. yds.

This list may seem cryptic, but a little study will serve to enlighten the reader. The first item means that the sills are to be of 4-inch by 4-inch material and that there will be two 18 feet long and two 12 feet long. The plates in this case will be made of four-by-fours and there will be two 18 feet and two 12 feet long. For larger buildings plates are made of two two-by-fours spiked or nailed together. According to specifications the studs must be placed 16 inches on centers, and so, if the walls are figured as being solid, with no openings for doors, there will be fourteen spaces and fifteen studs on each side and eight studs at each end. This will make 46 studs that will be needed and which will be 9 feet long, but as studs are ordinarily cut in even lengths the mill will probably deliver one-half the number 18 feet long. For the sake of safety fifty will be ordered as shown. The seven studs that are orderer 12 feet long are used to make up the ends of the gable.

The specifications called for 2-inch by 6-inch rafters, and as these are placed 16 inches on centers there will be needed fifteen on each side or thirty in all. The ridge board is also made of 2-inch by 6-inch material, although it is often made 1 inch by 10 inches. The length is given as 18 feet. The method for determining the number of square feet of sheathing was outlined in the last article. The distance around the garage is 60 feet. The height to which the sheathing will be carried is 9 feet. The number of square feet of sheathing that will actually be put on will be $60 \times 9 = 540$, but it will be necessary to order one-fifth more—108 square feet—making a total of 648 square feet. It will be noticed that there are 650 square feet ordered. The sheathing for the gable end can be made up from the material not used at the openings.

The method of determining the number of shingles that will be necessary to cover the side walls and roof is fairly simple. It is only necessary to multiply the square feet of surface to be covered by seven and one-half. The roof will project 6 inches at either end of the garage and will therefor be 19 feet long. The distance from the eaves to the ridge may be taken as 9 feet. The area of one side of the roof is $19 \times 9 = 171$ square feet. The area of both sides is 342 square feet and the necessary number of shingles will be $342 \times 7.5 = 2{,}563$. In the same manner the required number of shingles on the sides is determined. It has been found that the area of the side walls is 540 square feet, and this, multiplied by 7.5, will give 4,050 shingles. There will also be needed shingles to cover the gable ends. These two triangles may be regarded as a single rectangle having a height of 5 feet and a base of 12 feet, the total area of which will be 60 square feet. This area, multiplied by 7.5, will need 450 shingles. The total number will be found as shown below.

Roof	2,600 shingles.
Walls	4,050 shingles.
Gables	450 shingles.
Total	7,100 shingles.

This is the number ordered, as may be seen by referring to the list. The number seven and one-half gives good results for random Perfection shingles. Other shingles may require a larger or smaller factor depending upon the sizes in which they come. It may be stated that the shingles on the side walls are exposed more to the weather than those on the roof, but as the former are laid in double thickness—two-ply—the factor is the same for both conditions.

The shingle lath are next figured. These are placed on the rafters as far apart as the shingles are laid to the weather, usually from 4½ to 5½ inches. There will be, roughly, fifty rows of lath, and if the roof is regarded as being 19 feet long, the necessary number of lineal feet will be 950. Adding one-fifth for cutting, there will be needed 1,140 lineal feet needed. There are 1,200 lineal feet ordered on the list.

The only thing needed for the first order to be sent to the site is the building paper. This is used to cover the side walls and the area of these has been found to be 540 square feet. Building paper comes in rolls of 100 and 500 square feet. Allowing for lap, it will be necessary to order one large roll, and two small rolls in the present case.

The materials enumerated so far are ordered first, and

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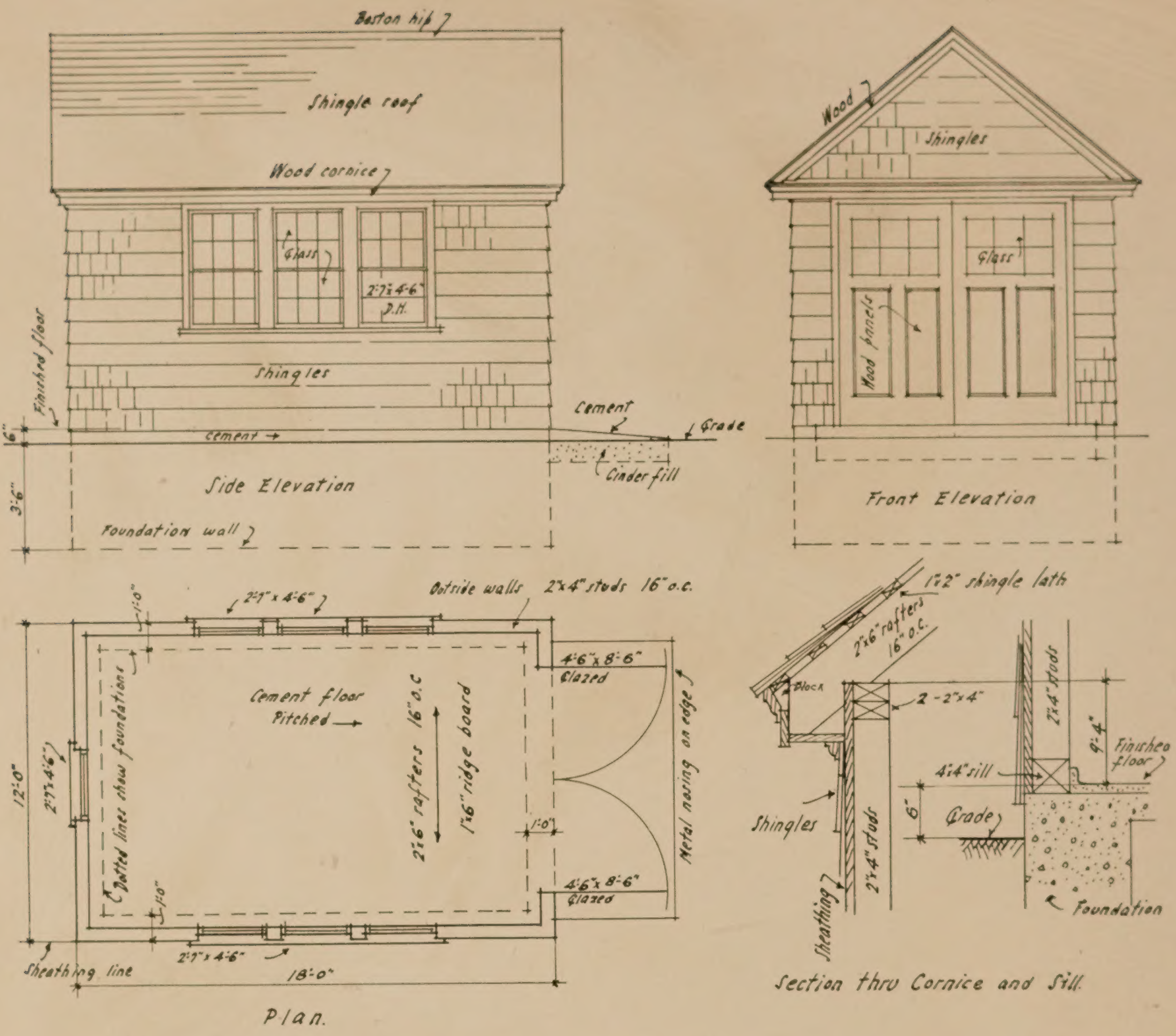


FIGVRE 6

are usually delivered to the site at the beginning. It will be noticed that the building paper, cement, sand and gravel cannot be classed as timber, but as mills often supply the first two materials, and as sand and gravel have to be ordered, they are given with the other materials. The cement, sand and gravel are first delivered on the site and the foundation work is carried on, as will be explained later. In the meantime the rough lumber is ordered and delivered, and then the stock necessary for the cornice. It will be noticed from the architect's sketch, (Fig. 6) that the cornice is indicated at the eaves, and across the front, continuing up to the point of the gable. If each side of the roof measures a full nine feet on the slant, the total length of cornice under the gables will be about 35 feet. The length around the garage has been found to be 60 feet, and, allowing for overhang, the total length will be 65 + 35 = 100 lineal feet of cornice. If the soffit of the cornice is 6 inches wide, and the facia 4 inches, the length and sizes of the materials for the cornice, shown on the list, are explained.

The only other items to be explained are the doors and windows and as these are made according to the architect's details, the builder is relieved from the necessity of explaining about them. The drawings and specifications are sufficient.

After the rough lumber is on the site, the cornice material is ordered and, last, the doors and window trims and sash.

As has been stated the first thing for the builder to do is to make out the list as explained above and to submit this to the mills for bids. The next step is to visit the property and to locate the position of the garage. He lays out his batter boards, which are simply pieces of sheathing nailed to uprights. These uprights are two-by-fours, driven into the ground from two or three feet away from the foundation walls, and these, with the batter boards attached, are shown in Fig. 7. On these batter boards notches are made in such positions that cords may be stretched from the notches in opposite batter boards which will outline the outside lines of the foundation walls. This is also shown in the figure.

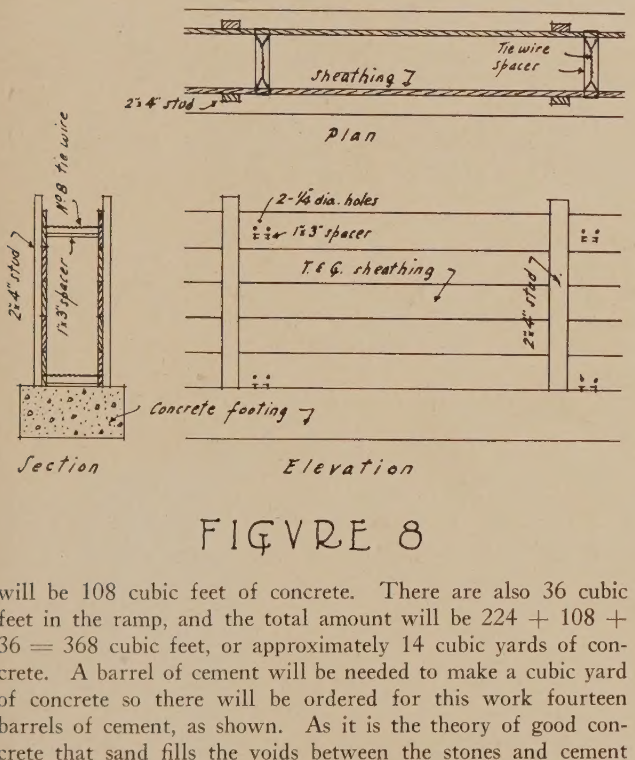
FIGVRE

Once these lines are established, the trenches are dug.

If the foundation walls are indicated on the drawings as being a foot thick, it is customary in some cases to make the trenches 16 inches wide, allowing 2 inches over on either side, on which to rest the forms for the upper part of the walls above grade. For this type of work it is not customary to make forms for the walls below grade. The trenches are dug deep enough to avoid frost. Near New York it is not necessary to make the trenches more than 4 feet deep, but in colder parts of the country it is often necessary to make them 6 feet deep. Once the trenches are completed the concrete is mixed and poured. The concrete for the trench and foundation walls was specified to be a one-two-five mix, which means that the mixture is made in proportions, by volume, of one part cement, to two parts sand, and five parts of broken stone or gravel. In the list it will be noticed that there are fourteen barrels of cement ordered. Nothing has been said about the method of determining the amount needed, but in connection with the subject of foundation walls, it is well to investigate it.

It will be seen that the foundation walls are called for, on the architect's sketches, to be 4 feet below the finished floor level, and as there are two 18-foot walls and two 10-foot walls, all 4 feet deep, there will be 224 cubic feet of concrete in the walls.

In the floors there are 18 × 12 = 216 square feet of concrete which can be figured as 6 inches deep. In this case there will be 108 cubic feet of concrete. There are also 36 cubic feet in the ramp, and the total amount will be 224 + 108 + 36 = 368 cubic feet, or approximately 14 cubic yards of concrete. A barrel of cement will be needed to make a cubic yard of concrete so there will be ordered for this work fourteen barrels of cement, as shown. As it is the theory of good concrete that sand fills the voids between the stones and cement fills the voids of the sand, it will be necessary to order as many cubic yards of stone and sand as there are barrels of cement. There will be ordered 14 yards of stone and 14 yards of sand.

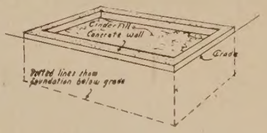


FIGVRE 8

The 14 barrels of cement may come in fifty-six bags, as there are four bags of cement to a barrel. In case the cement comes in bags, as it probably will, there will be a charge of ten cents per bag extra, which amount will be returned upon the return of the bags in good condition.

The concrete is poured up to the level of the grade and allowed to set. Just before it sets, however, it is customary to roughen the surface or to place some large sharp stones in it to give a bond to the concrete that is poured upon it.

Once this concrete is set the forms for the concrete are placed upon it. A form can be made by using two-by-four vertical strips on the outside and ⅞-inch sheathing inside of these. The forms are held apart by wood strips which measure the exact width of the concrete walls. Wires are run from one form to the other and are tightened to bring the forms against the wood spacing strips. When the concrete is poured, the spacing strips are removed and the outward pressure of the concrete presses the forms against the wires. The forms are carried up to a height at least six inches beyond the actual height of the foundation wall and the wires at the top will come just above the concrete when poured. After the concrete has set the upper wires are removed entirely, but the lower wires are simply cut to allow the forms to be removed and most of the wire is left in the concrete.

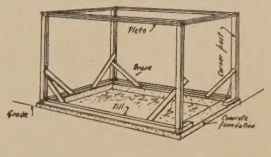


FIGVRE 9

Once the forms are removed, which should not be done in less than forty-eight hours, the foundation walls are ready for the sills (Fig. 9). The next step is to fill in the cinders to a height within five inches of the finished floor. There should be at least six inches of cinders to allow for drainage. On this is placed 4 inches of concrete which is mixed in proportion of one volume of concrete to two volumes of sand and four of stone. The concrete is brought to a level with the foundation walls, so that there will be a flat surface on which to build. The sills are next laid, 1 inch back of the outer edge of the footings as shown and on them the corner posts are erected and braced temporarily. On these the plates are laid (Fig. 10) and the remainder of the construction is similar in nearly every detail to that outlined in the last article.

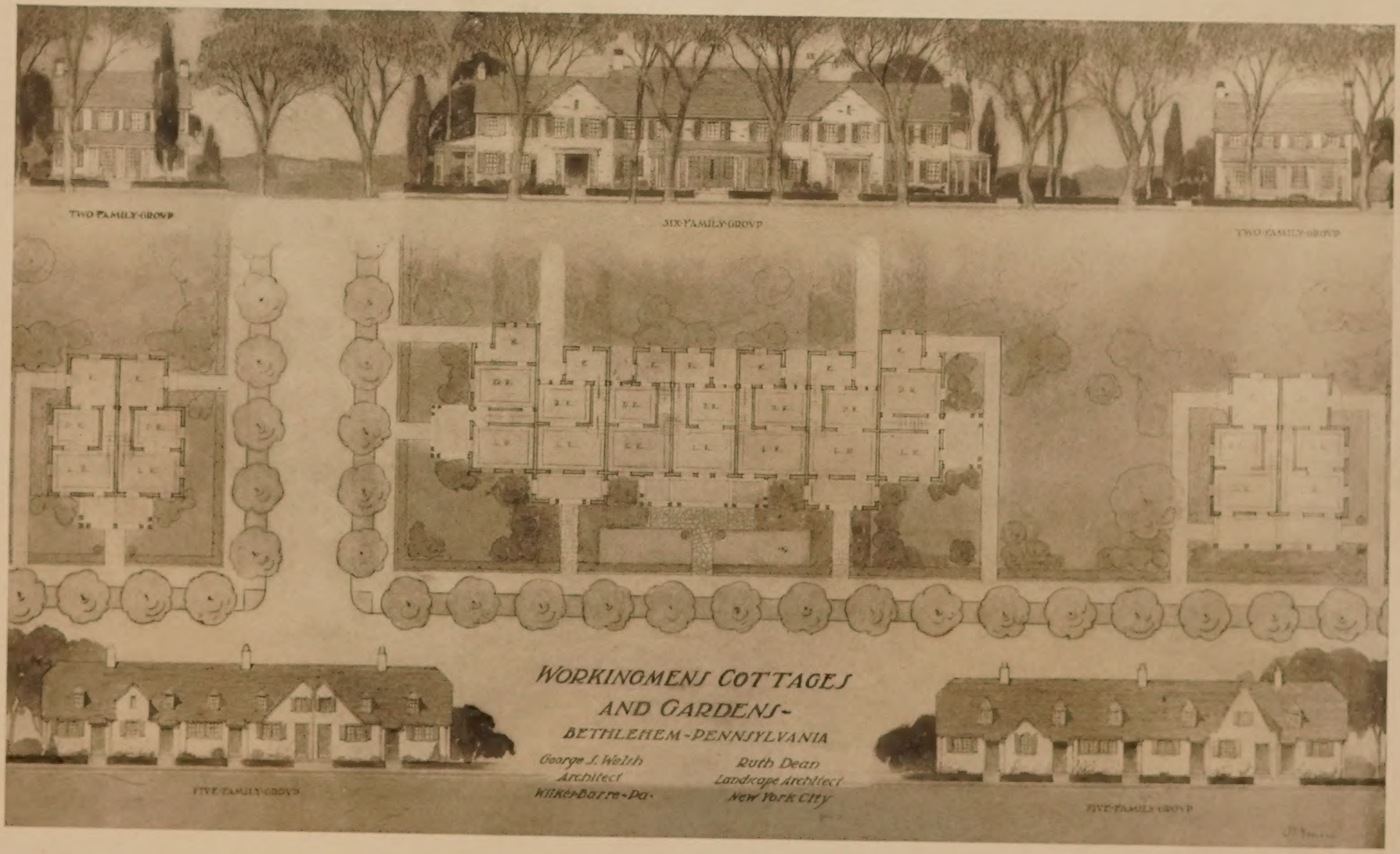
The only new features are the careful setting of the door and window frames and the framing of the roof. One rafter is cut to serve as a pattern for all the others. The method of cutting is simply to find out the pitch of the roof and to lay off this pitch by means of a carpenter's square. The pitch has been decided upon as 10 inches to the foot. The square is laid on the rafter, as shown in Fig. 11, with 10 inches of one leg and 12 inches of the other leg cutting the edge of the rafter.

This immediately establishes the line at the end of the rafter which butts against the ridge. By repeating the operation so that the horizontal measurements add to the distance from the center of the garage to the outside of the cap, the point at which the seat for the cap must be cut is found. This cut should not come nearer the upper edge of the rafter than 4 inches. The remainder of the rafter is sawed to take the cornice which is built up as shown in Fig. 6. After one rafter is carefully laid out all the others are cut to match it. Two rafters at each end of the garage are put in position with the ridge board and spiked in place. Then the other rafters are put in place. Over these are nailed the shingle strips, placed 5½ inches on centers, and on these strips are nailed the shingles. These shingles must measure a full 18 inches in length in order to have the exposed part only one-third the length of the shingle. As the shingle strips are placed 5½ inches on centers the shingles will be exposed the same distance to the weather.



FIGVRE 10

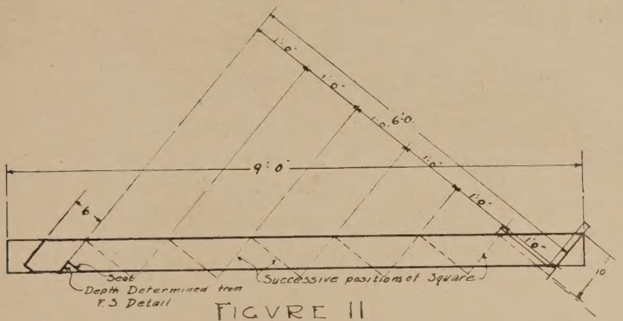
The method of locating the ridge board by means of the end rafters is liable to allow the ridge to sink a little below the height shown on the architect's sketch. The method of cutting the rafters outlined above is open to the criticism that


TWO FAMILY GROUP
SIX FAMILY GROUP
TWO FAMILY GROUP
WORKINGMENS COTTAGES AND GARDENS-
BETHLEHEM-PENNSYLVANIA
George J. Welsh Architect Wilkes-Barre-Pa.
Ruth Dean Landscape Architect New York City
FIVE FAMILY GROUP
FIVE FAMILY GROUP

COTTAGES AND PLANS, COMMUNITY FOR WORKINGMEN, BETHLEHEM, PA.

G. J. Welsh, Architect. Ruth Dean, Landscape Architect.

it is difficult to measure the exact distances without making slight errors. For these reasons it is often found advisable to locate the ridge board first and hold it in position by means of two uprights spiked firmly in position. The rafters are laid out by placing them on the ground and laying off the exact measurements of the height and position of the plates, etc. This does not allow errors to accumulate as they might if the other method is used.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6
10
Seat
Depth Determined from F.S Detail
Successive positions of Square

FIGURE 11

The sheathing is sometimes put on before the rafters are in place, in which case the rafters set over the caps and the sheathing. The sheathing braces the studs and makes a firmer hold for the rafters.

After the roof is on a 1-inch finishing coat of cement mortar is laid over the 4 inches of concrete on the floor. This is brought up in the shape of a cove around the sills and covers the inner sides of them.

The only other thing that may be necessary for the completion of the garage is the placing of the collar beams—simply ties that are used to connect opposite rafters to prevent them from spreading—and these are nailed to the rafters a little above the plates. Sometimes these are used for ceiling beams and on the under side of them ceiling boards are nailed. But in the present case, as all the interior is left exposed, this will not be done.

A Community for Workingmen, Bethlehem, Pa.

George S. Welsh, Architect. Ruth Dean, Landscape Architect

THE difficulty of housing workmen which was a result of the wave of war prosperity which broke over our manufacturing towns was perhaps as serious in Bethlehem, Pennsylvania, as in any town throughout the country. The big steel industries centered here attracted laborers in great numbers, and the town which had hardly enough house room for its normal population found itself totally unable to give shelter to the excess. These unfortunate ones spilled over into the neighboring towns and became trolley-car commuters under the most uncomfortable conditions. Messrs. Weston Dodson & Company, who had long been in possession of an idle and comparatively valueless tract of land near the steel mills, saw their opportunity to utilize this ground, and decided that while they were about it they would build a sightly and permanent community rather than the "fly-by-night" kind which is apt to follow on the heels of any boom.

The land to be included in the plan contained about twenty-seven acres, in two strips, joined together like the letter L. The steel mills lie to the southeast of the property, the business portion of the town to the southwest, conditions which suggested the two diagonal main avenues of entrance or exit, one toward the town and the other toward the mills.

When city and community planning came to be taken seriously in this country about ten years ago, one of the problems of the landscape architect was to combine with our practical needs, some of the artless charm of old villages which have grown up naturally. The secret of this sort of grace, of course, is its spontaneity, and so elusive a charm is not to be deliberately planned. On the other hand there are certain sure ways of avoiding it, and one of these is the so-called checkerboard plan, with its monotonous straight streets crossing each other at regular intervals. Almost everyone recognizes the complete ugliness of the illimitable street down which one gazes to nothing, and admits the delightfulness of what is known as the closed vista, the street whose end is blocked by a pleasing building. Almost everyone, too, who accepts the straightness of city streets as a necessary evil, appreciates the pleasure of walking along a curving country lane, that is, providing he is not going to miss his train by doing it. To sacrifice not too much of convenience to beauty, or more often, to beautify a little, the convenient plan is the hope of every community architect.

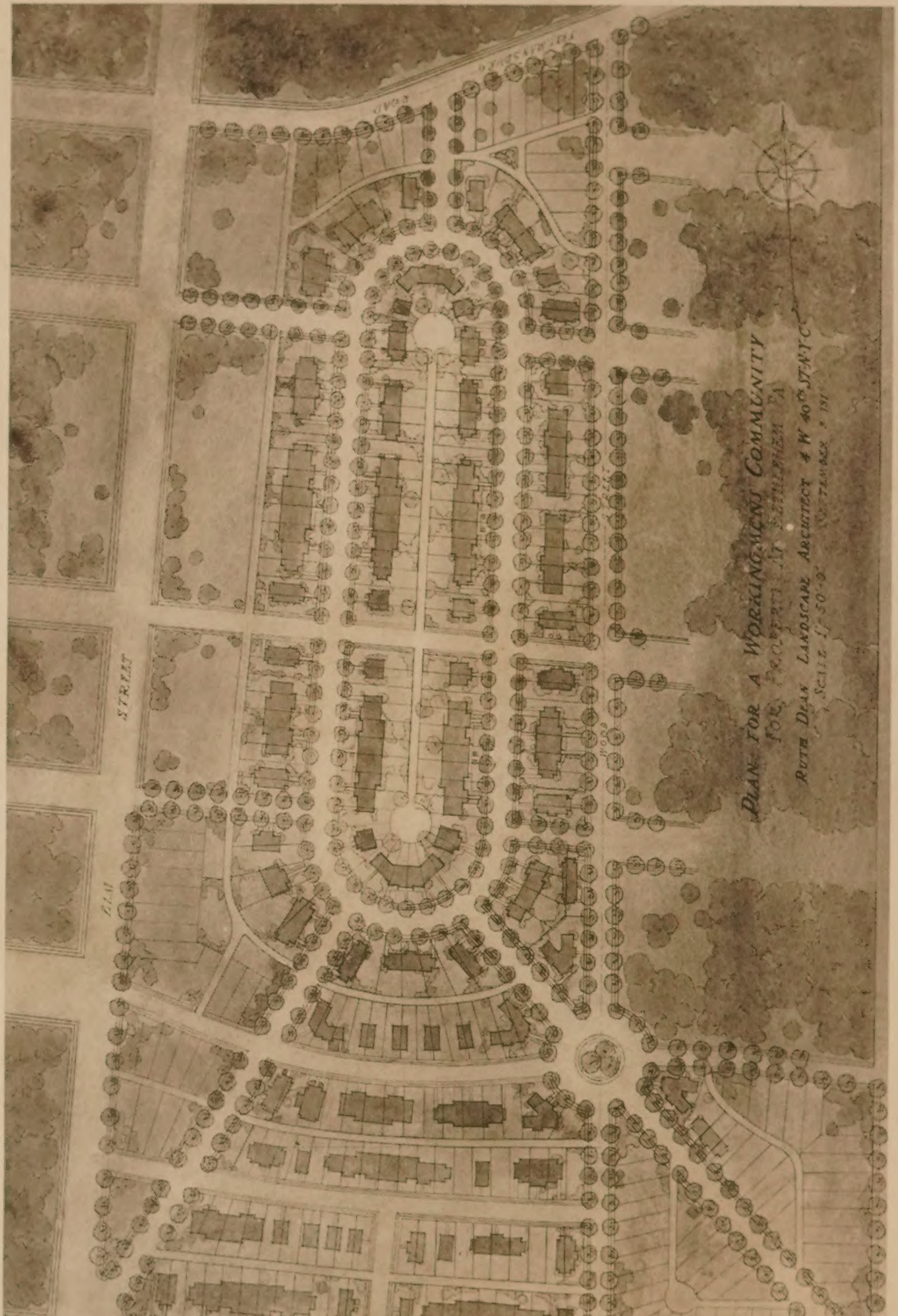
With the idea of getting as far from the conventional checkerboard plan as expediency would allow, the number of direct cross streets on the Bethlehem plan was cut to a minimum, and in two or three places the streets curved moderately in order to introduce the pleasing informal spirit that belongs to the winding road.

The blocks were two lots deep with alleys between the tiers, and the lots ran from 22 ft. by 80 ft. to 25 ft. by 110 ft. in size. The inevitable triangles and other awkwardly shaped pieces of land of which there are always a resultant few, were disposed of as sites for group houses or stores or community buildings of one sort or another which will undoubtedly come when the settlement is a little older.

At present ninety houses are under construction, sixty are complete and fifty are occupied. Operations were begun November 16, 1915, and the rapidity with which the work has been carried on attests its success, and is at the same time a pleasing commentary on the appreciation of the workingman for something better designed than the ordinary contractor's house. It has been interesting to watch the saleability of the various types of houses and rather discouraging, from the architect's point of view, to note the details with which the purchasers find fault. Small paned windows constitutes one of them, and Mr. Welsh's attempt to follow in some of the first houses, the very delightful example of the old Moravian houses in Bethlehem, met with small encouragement. One prospective buyer looked at the Colonial cottage offered him for sale and objected, "But I don't want that kind of a house; that's the same sort of houses they were building fifty years ago."

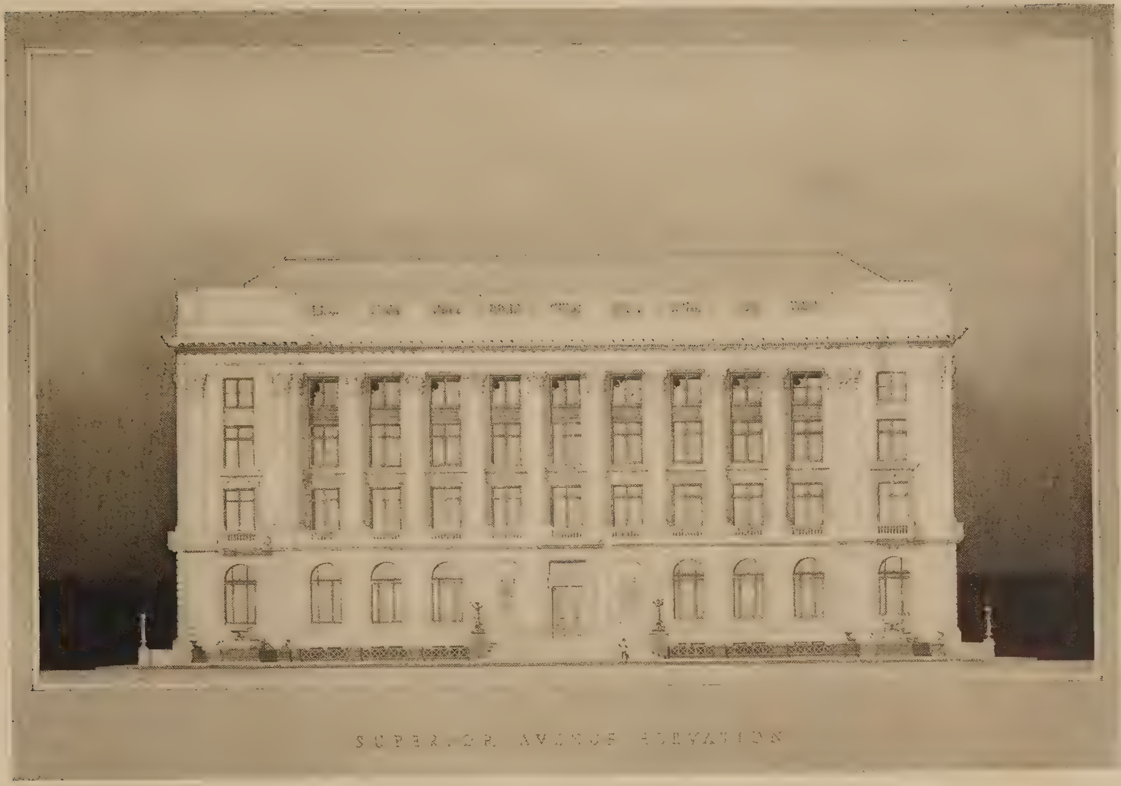
A front porch is another item for which there is an inevitable demand; every architect knows that he can make a small house fairly attractive if he is not burdened by the necessity of porches—but the fate of the house minus a piazza is sealed—from the workingman's point of view it has no place in which to smoke one's evening pipe in solid coatless ease, and no vantage point from which to observe the doings of one's neighbors. Other comforts, such as electric lights, six rooms and a bath, a hot-air heater, the houses may and do possess, but without a front porch they would be an absolute dead loss.

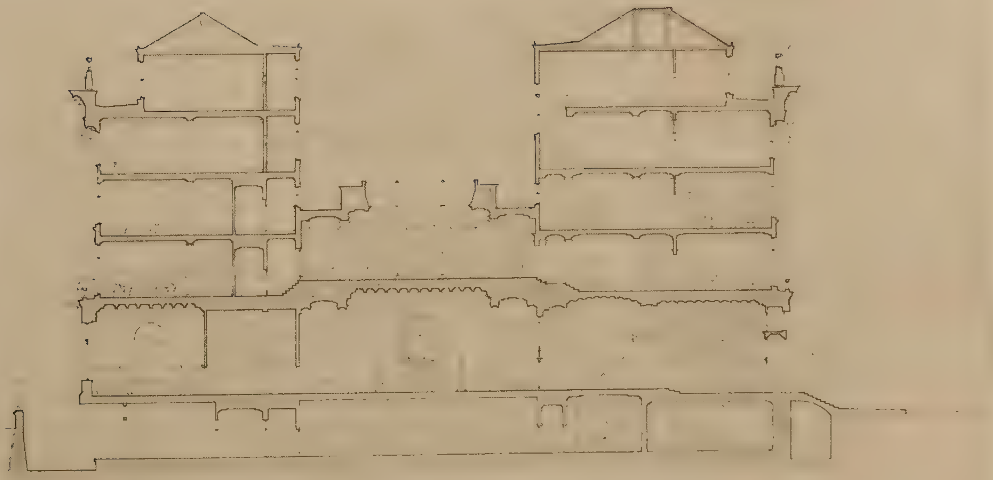
In price they run from twenty-five to forty-five hundred dollars, and the clerks and mechanics who are buying them receive salaries of from one hundred dollars per month up.


PLAN FOR A WORKINGMENS COMMUNITY
FOR PROPERTY AT BETHLEHEM PA
RUTH DEAN LANDSCAPE ARCHITECT 4 W 40th ST N.Y.C.
SCALE 1" = 50'-0"
SEPTEMBER
ELM STREET
BROAD STREET
ROAD

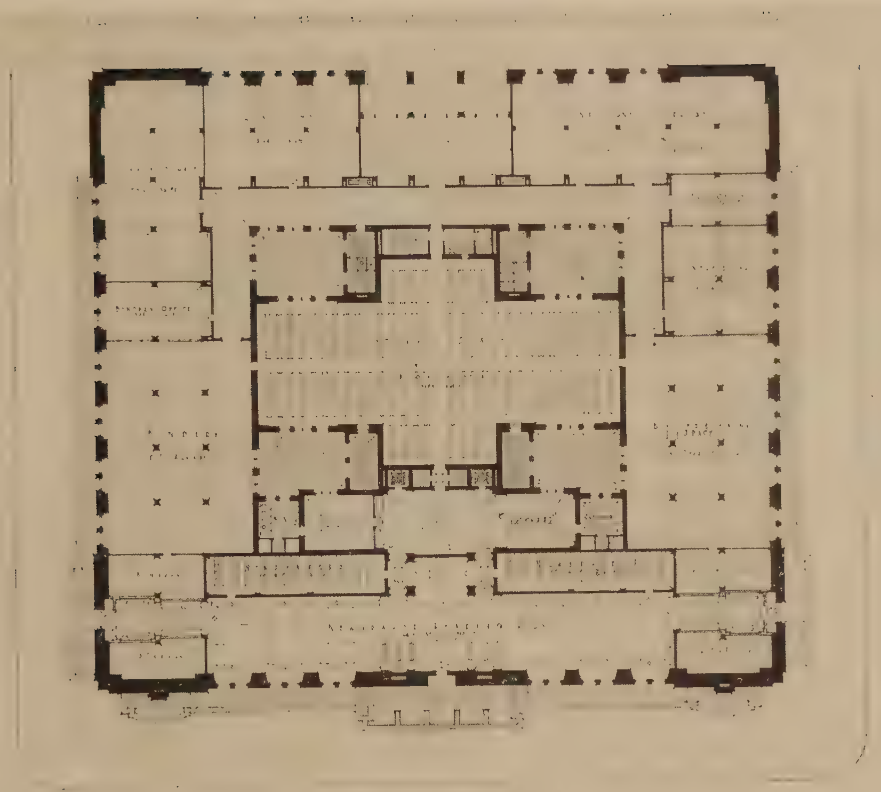
GENERAL PLAN, COMMUNITY FOR WORKINGMEN, BETHLEHEM, PA.

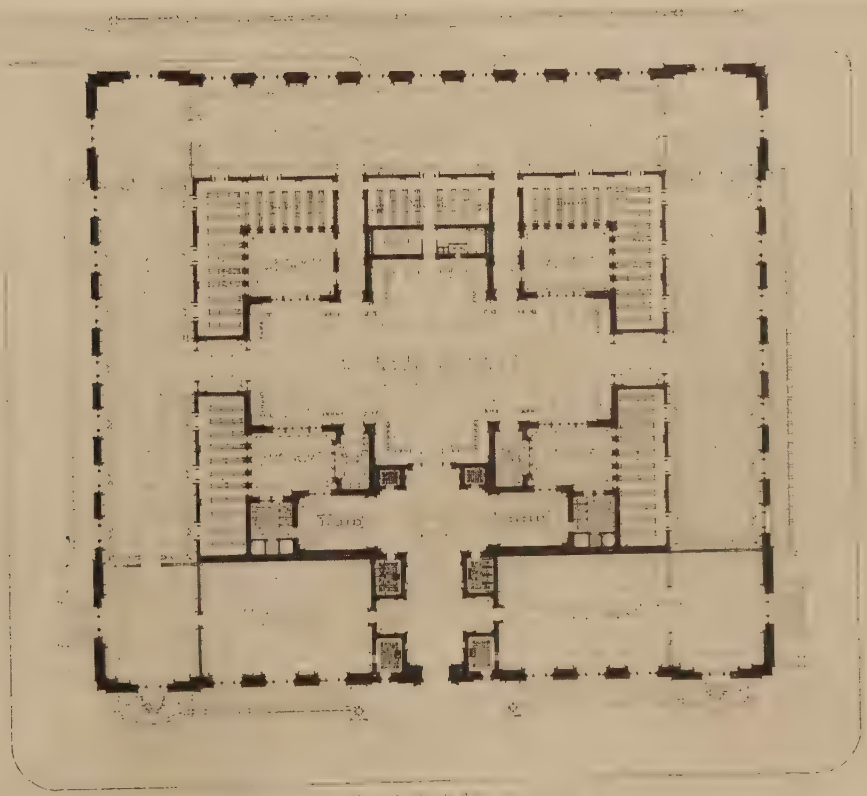
Ruth Dean, Landscape Architect.





PLACED I. COMPETITIVE DRAWINGS, PUBLIC LIBRARY, CLEVELAND, O. Walker & Weeks, Architects.





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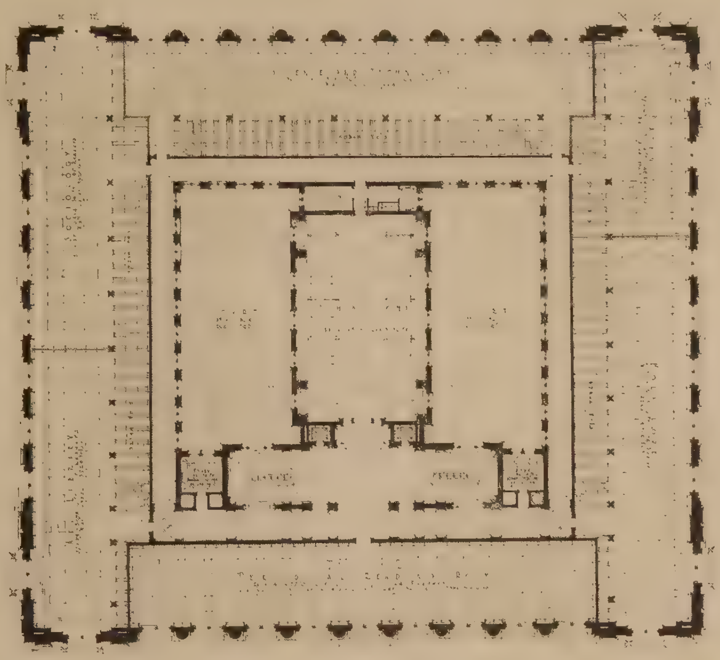
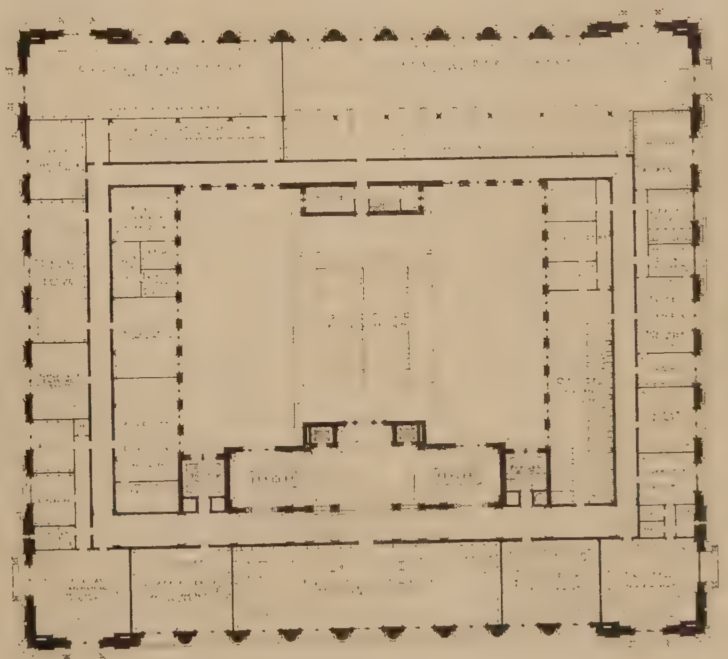


PLAN OF SECOND FLOOR



PLAN OF FIRST FLOOR

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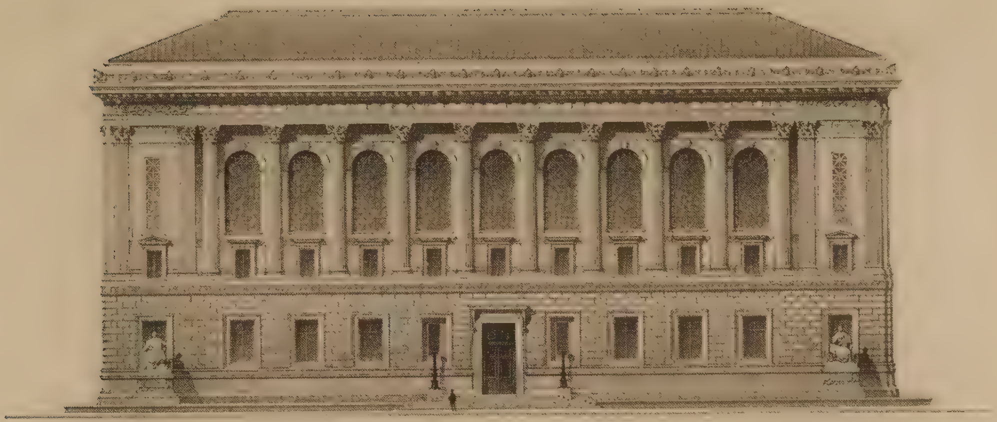
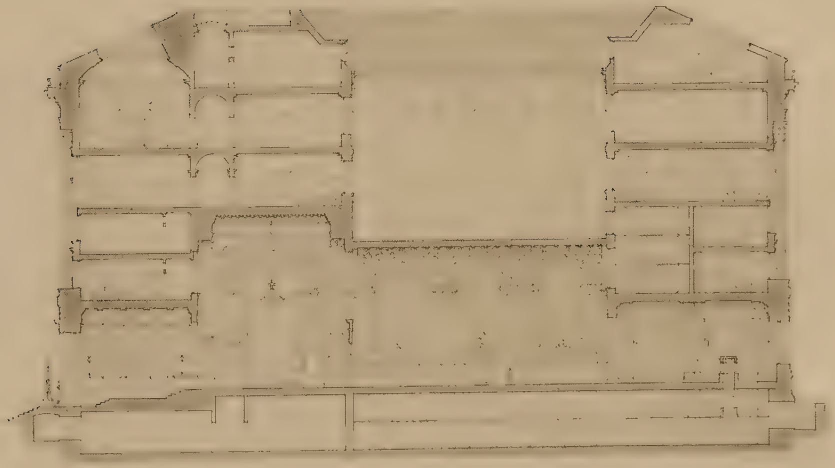
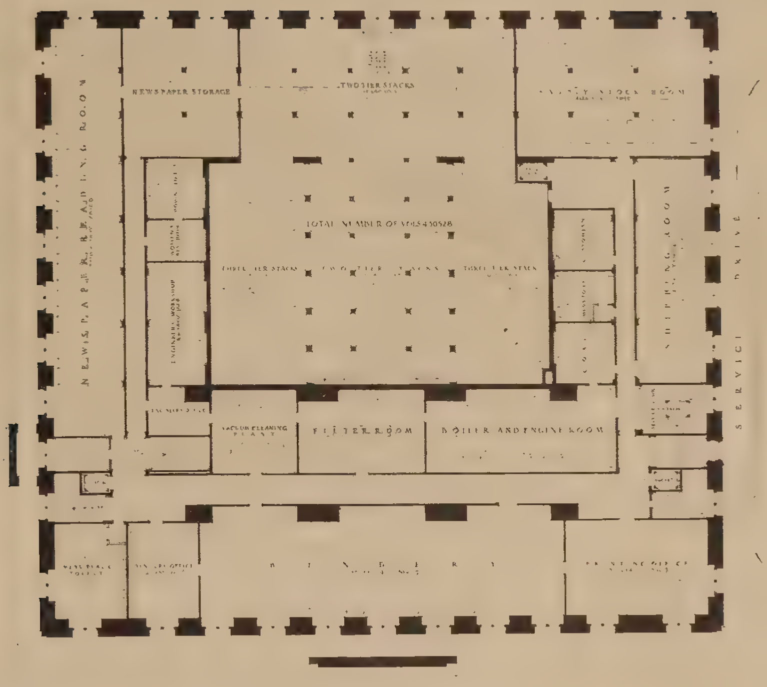


ELEVATION TO SVPERIOR STREET

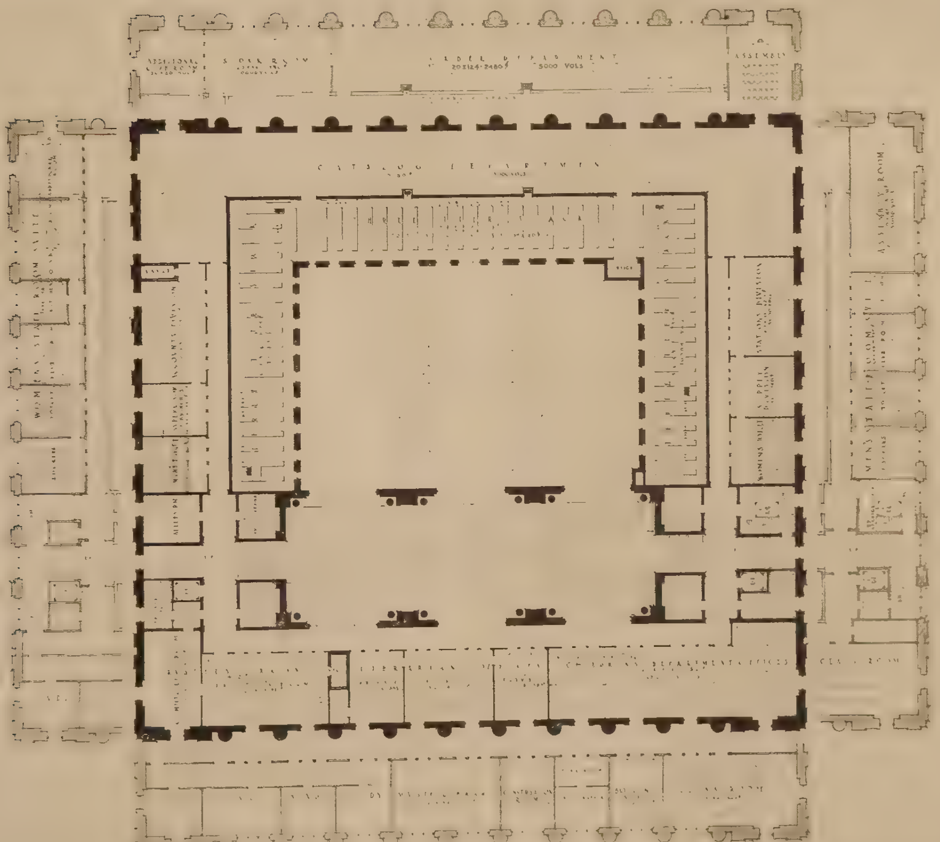


SECTION THROVGH NORTH SOVTH AXIS

PLACED II. COMPETITIVE DRAWINGS, PUBLIC LIBRARY, CLEVELAND, O. John Russell Pope, Architect.



PLAN OF BASEMENT FLOOR



PLAN OF SECOND FLOOR
[illegible] AND MEZZANINE

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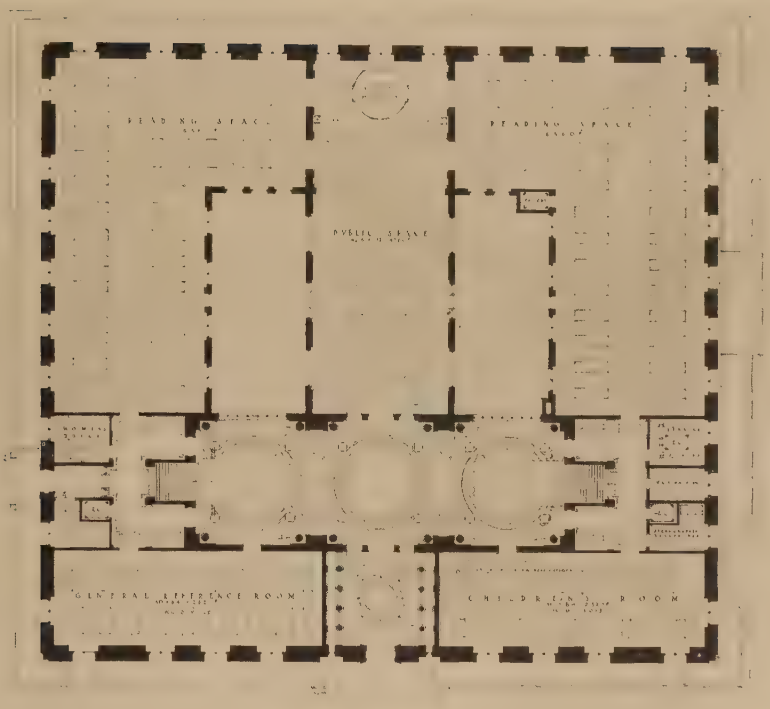
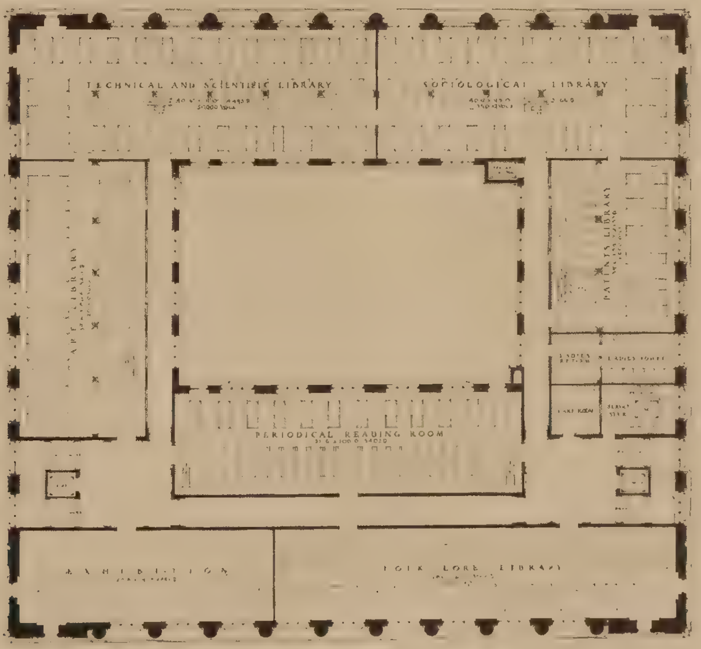


PLAN OF FIRST FLOOR



PLAN OF THIRD FLOOR

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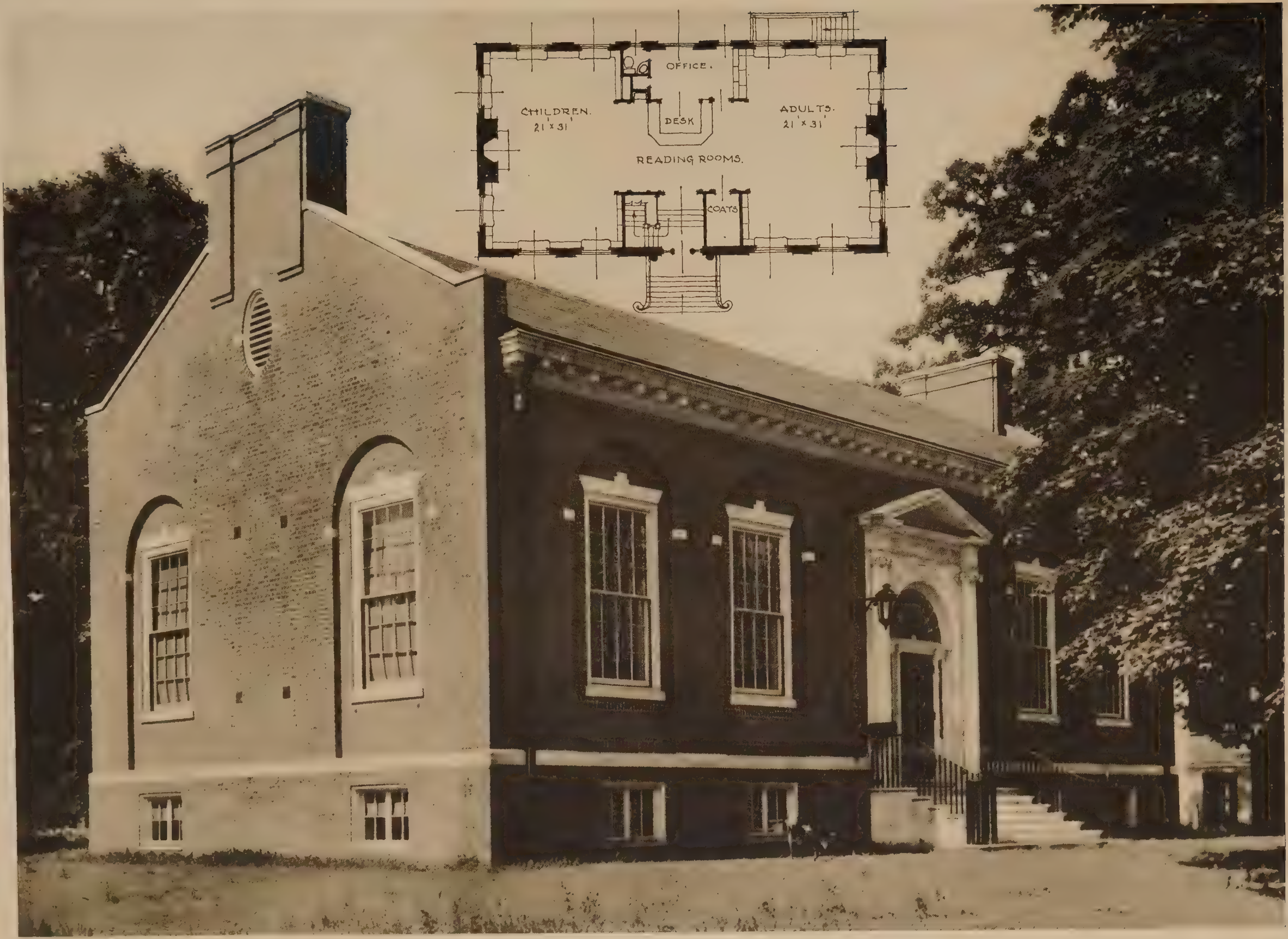
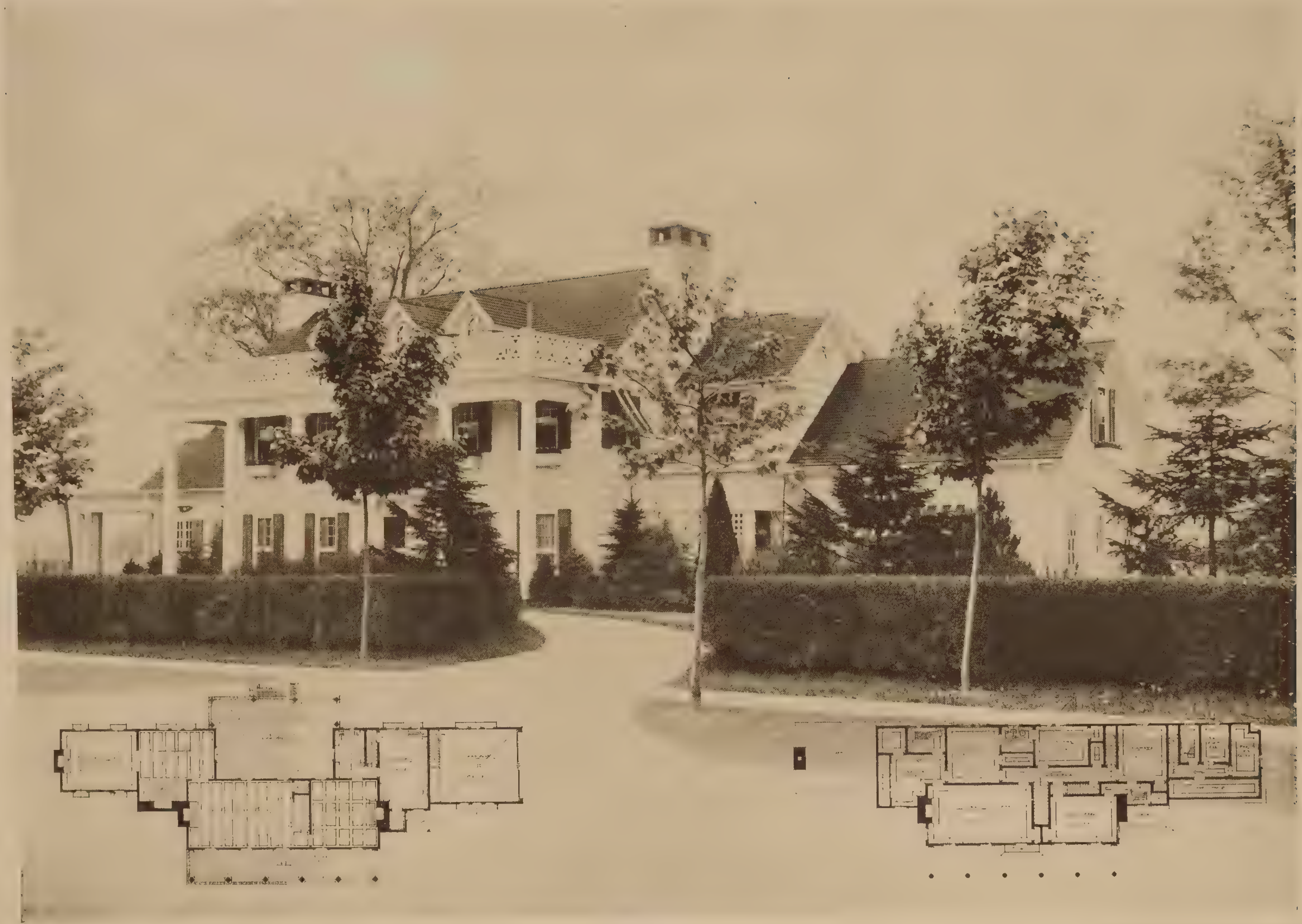


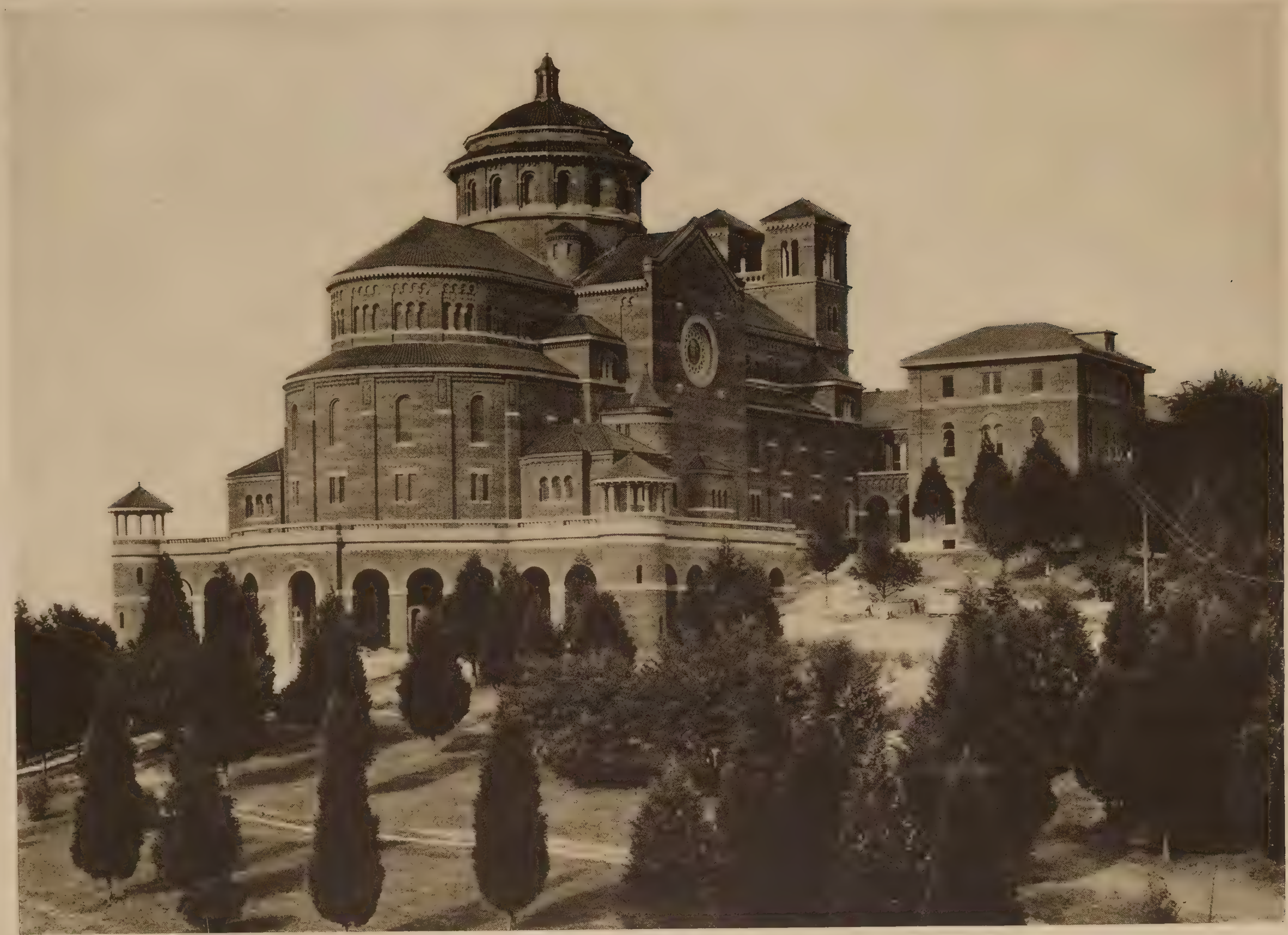
MEMORIAL PUBLIC LIBRARY AND PLAN, SEYMOUR, CONN.

Murphy & Dana, Architects.



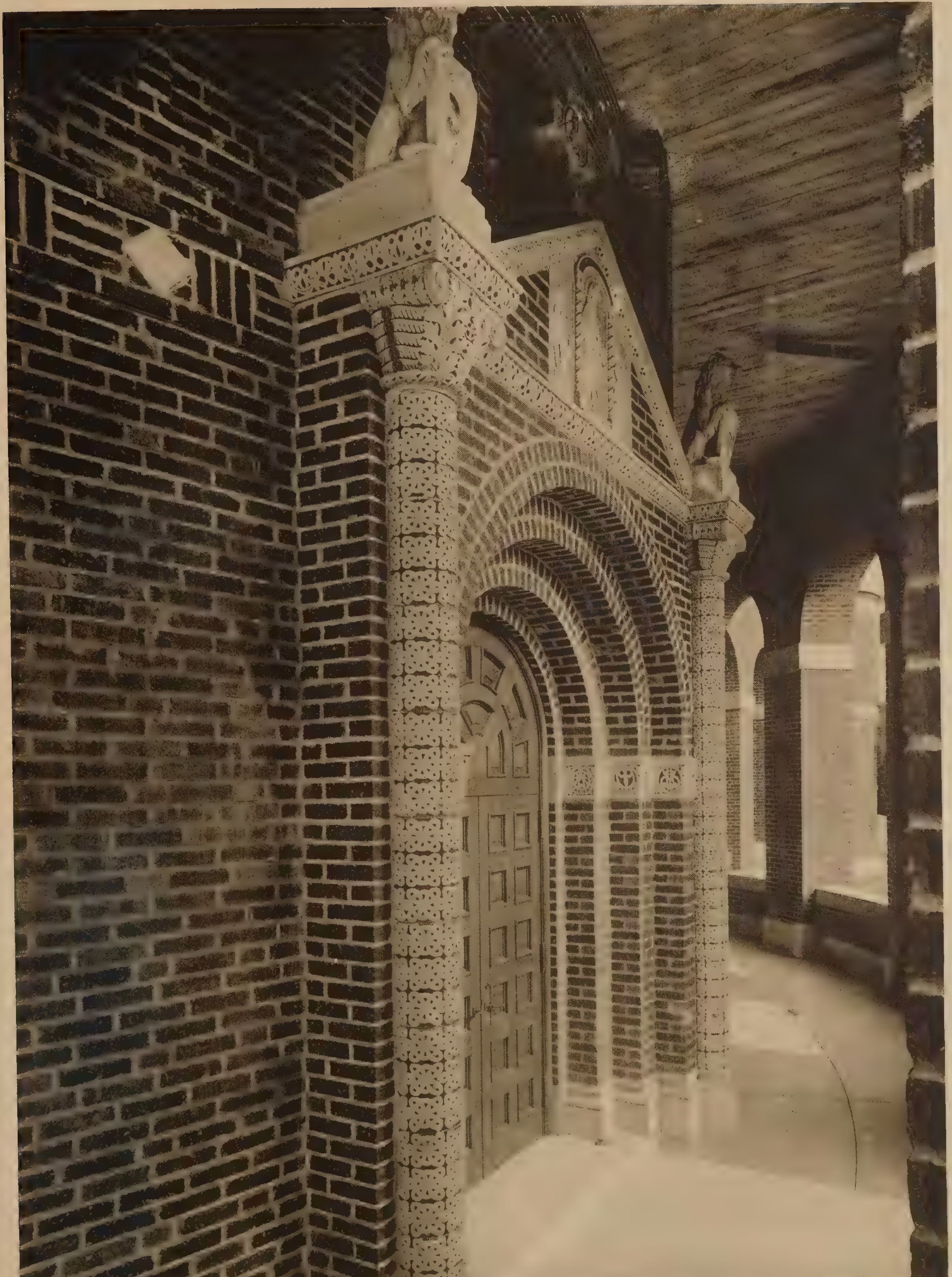
HOUSE AND PLANS, FRED'K T. STEINWAY, KENSINGTON, GREAT NECK, L. I.

Patterson & Dula, Architects.

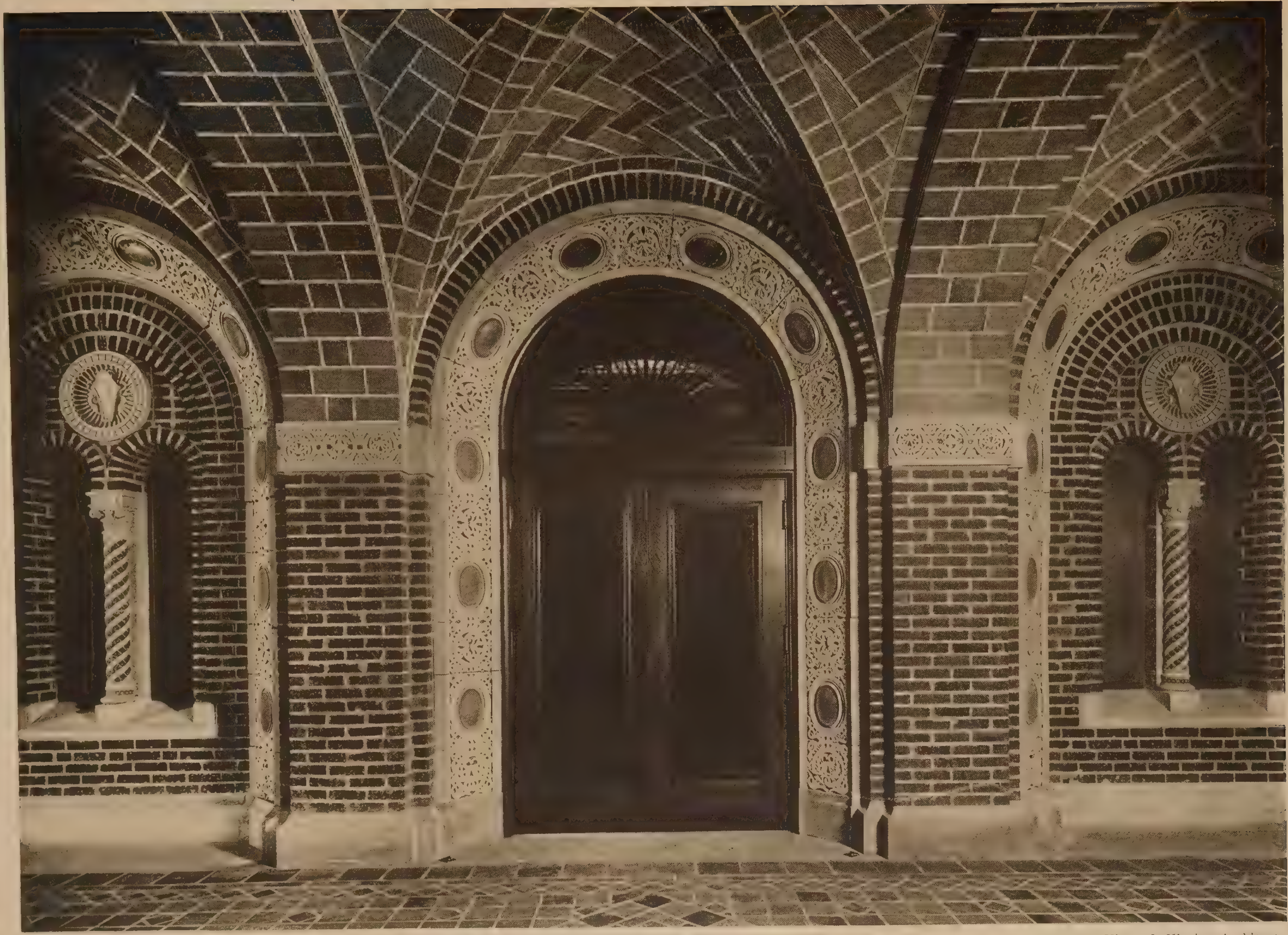


IMMACULATE CONCEPTION CONVENT, FERDINAND, IND.

Victor J. Klutho, Architect.

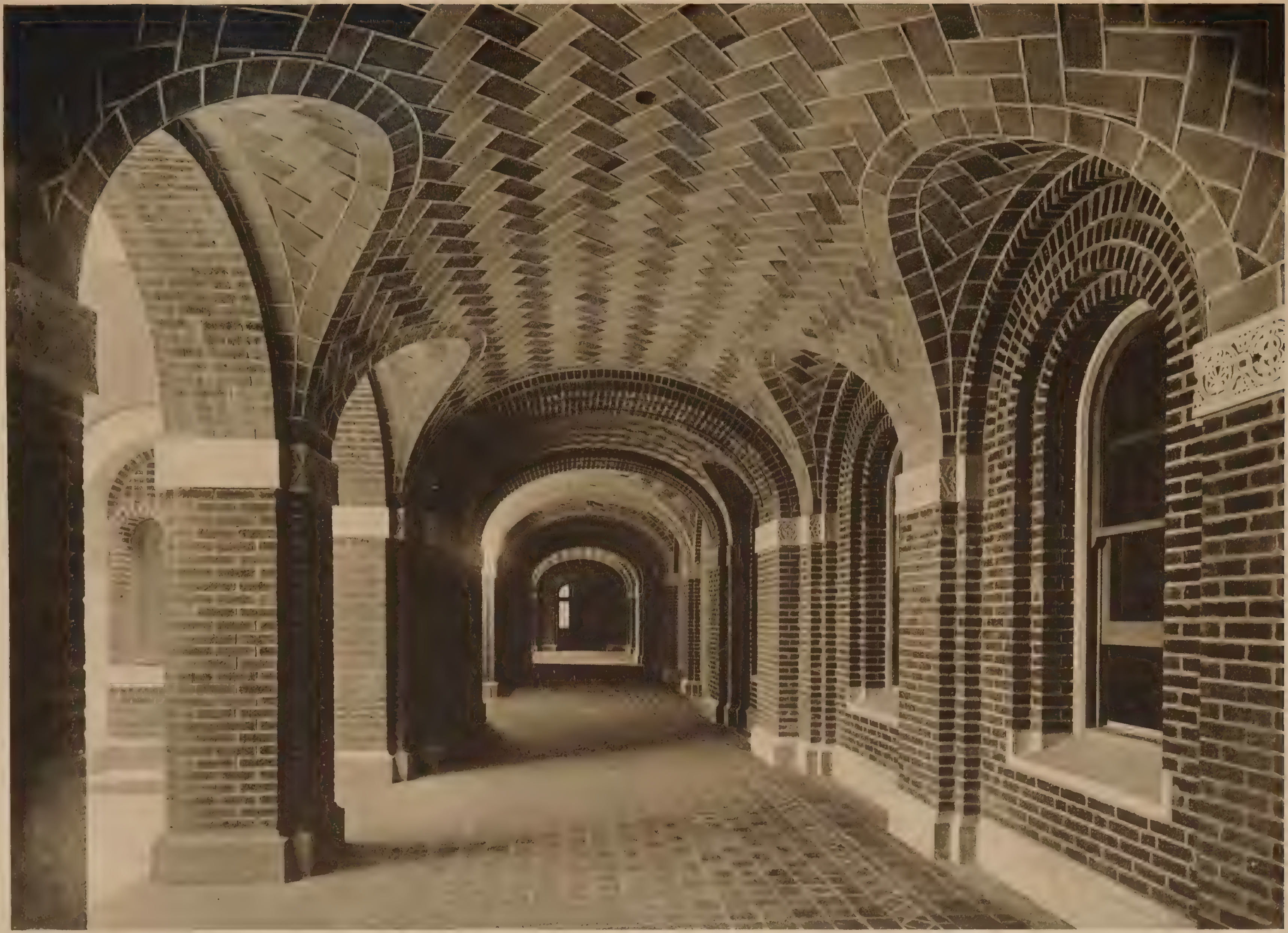


DETAIL, MAIN ENTRANCE, IMMACULATE CONCEPTION CONVENT, FERDINAND, IND. Victor J. Klutho, Architect.



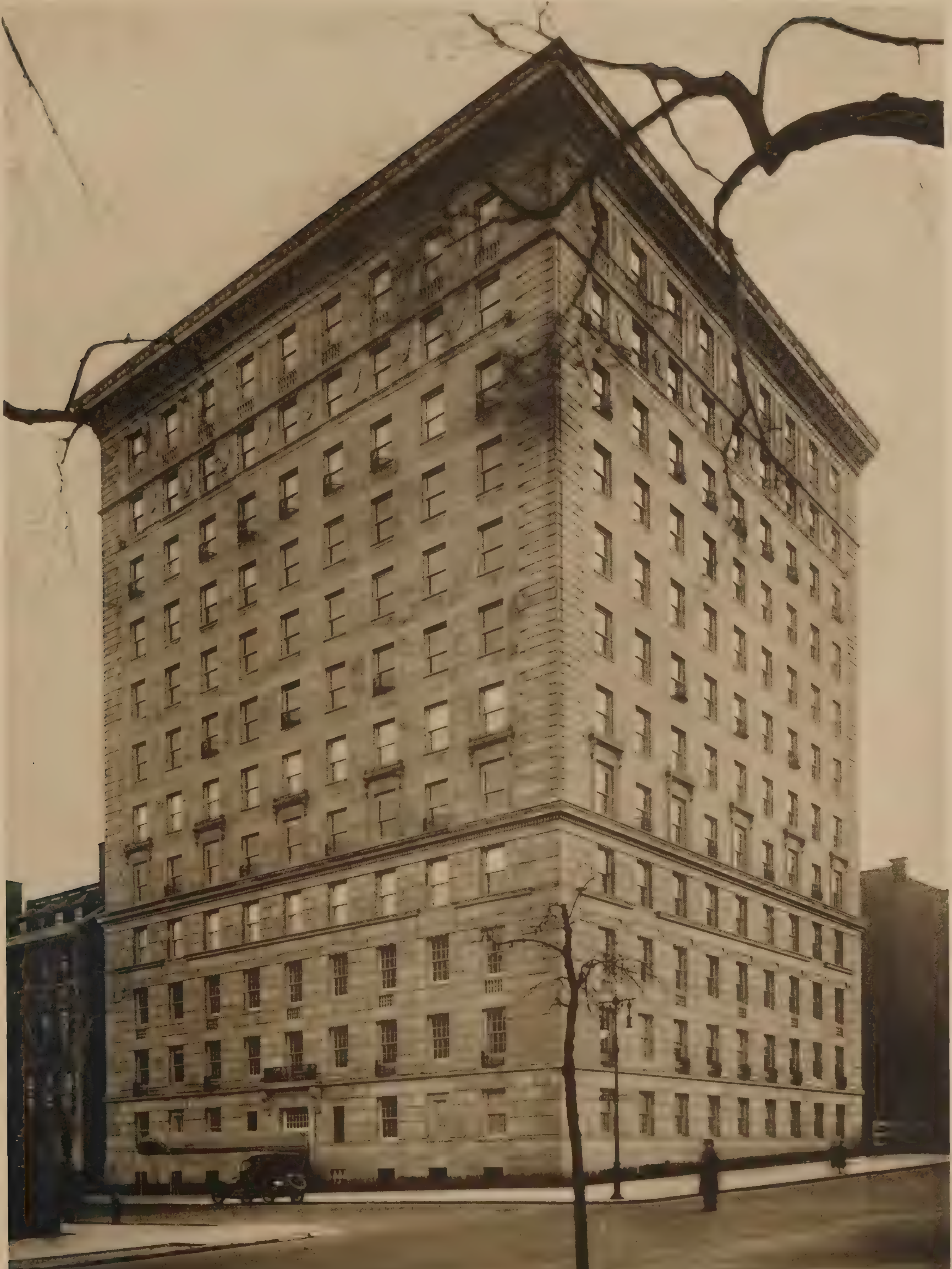
ENTRANCE, IMMACULATE CONCEPTION CONVENT, FERDINAND, IND.

Victor J. Klutho, Architect.

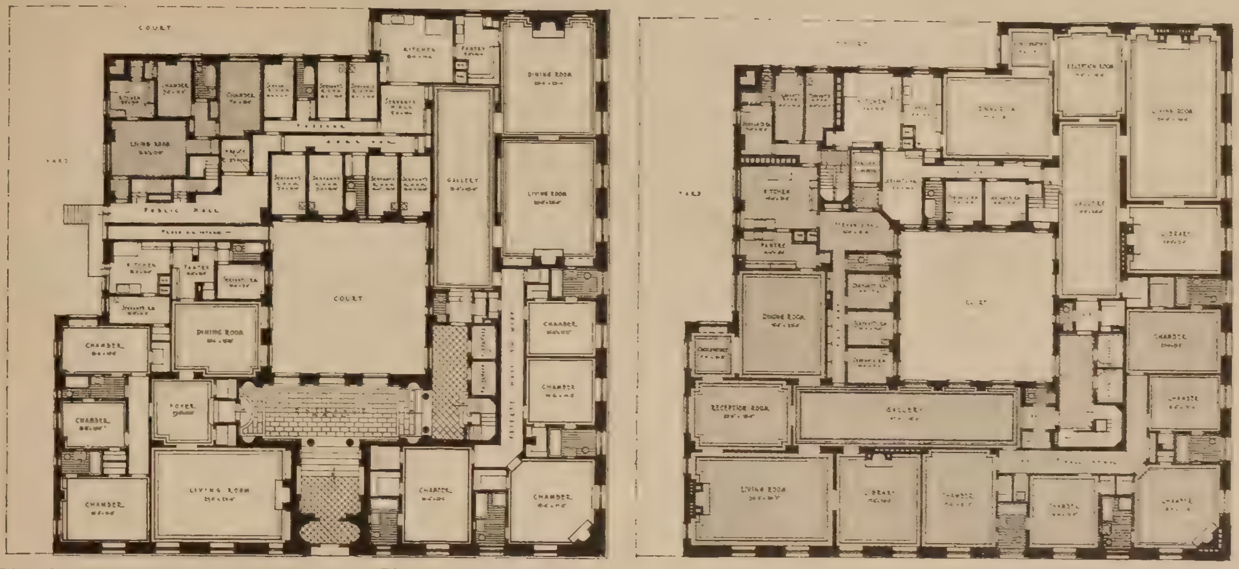


CLOISTER, IMMACULATE CONCEPTION CONVENT, FERDINAND, IND.

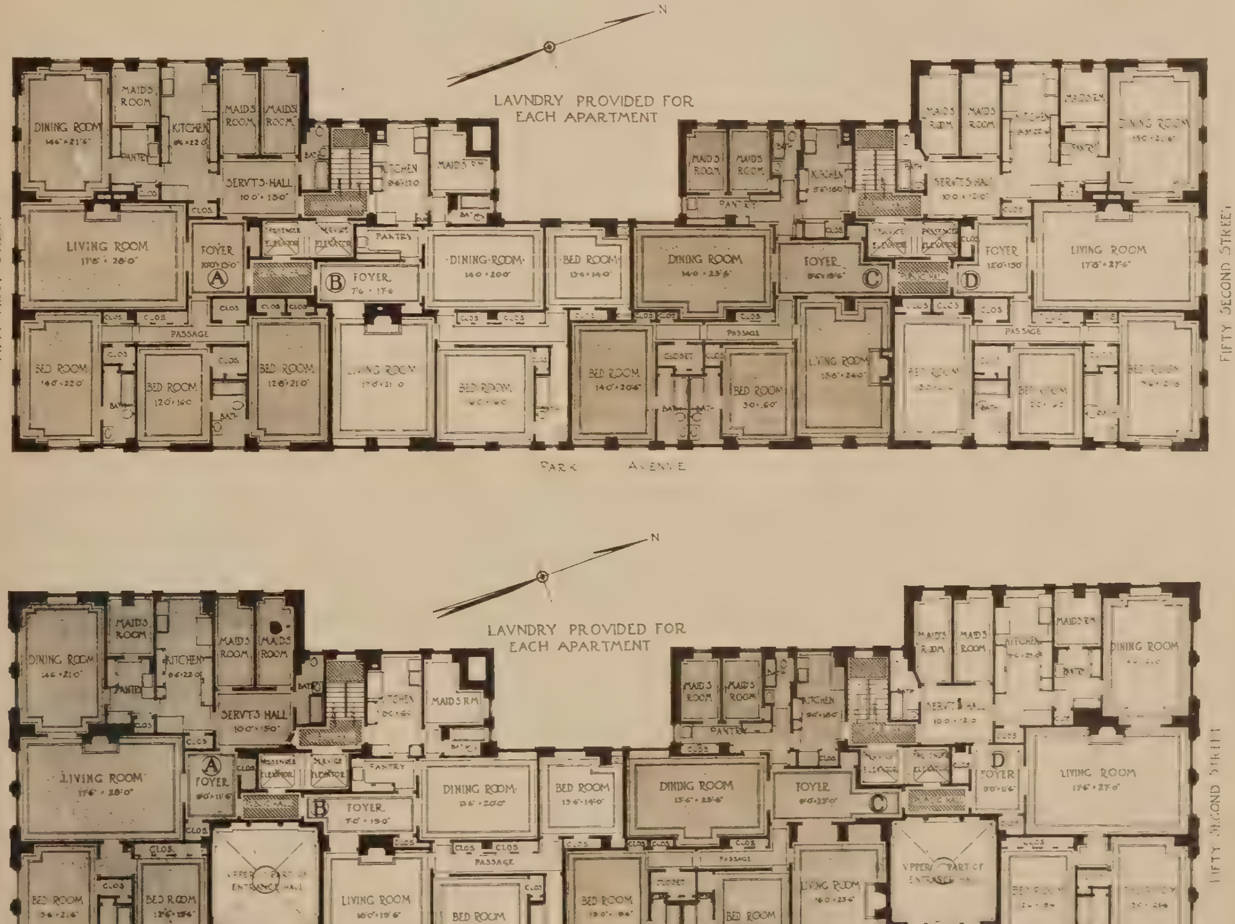
Victor J. Klutho, Architect.



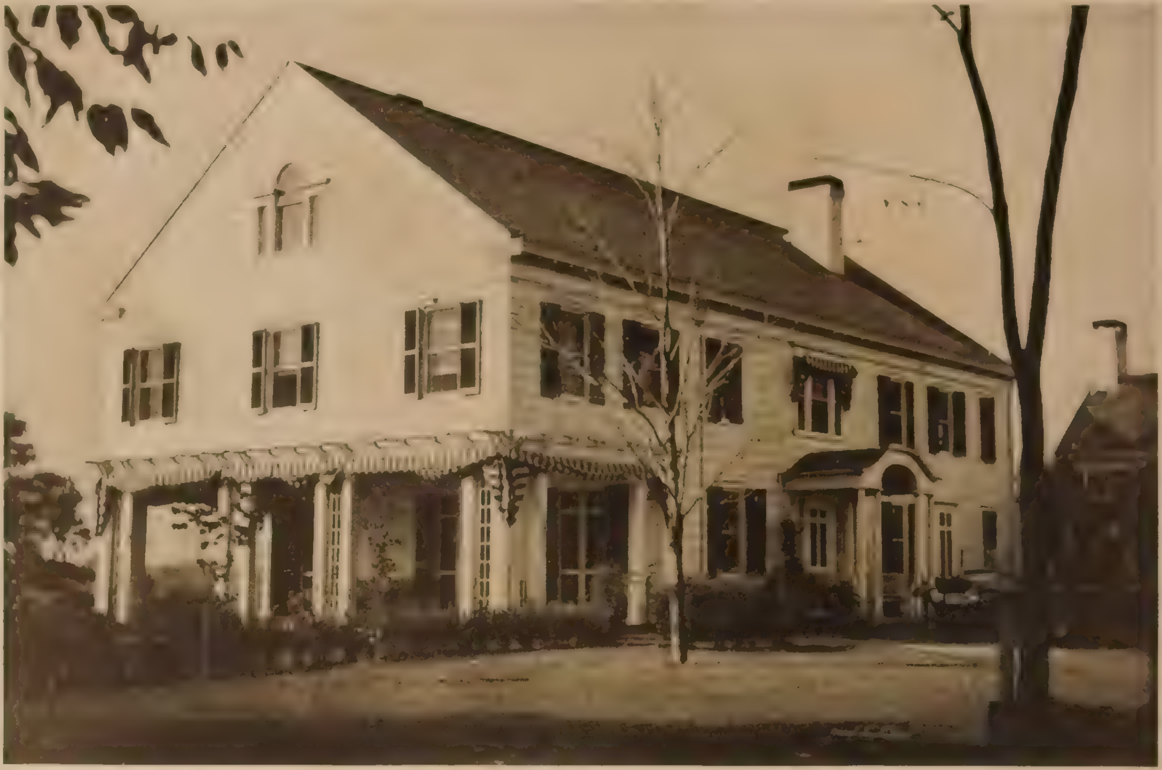
APARTMENTS, FIFTH AVE. AND 72D ST., NEW YORK. (Plans page 77)

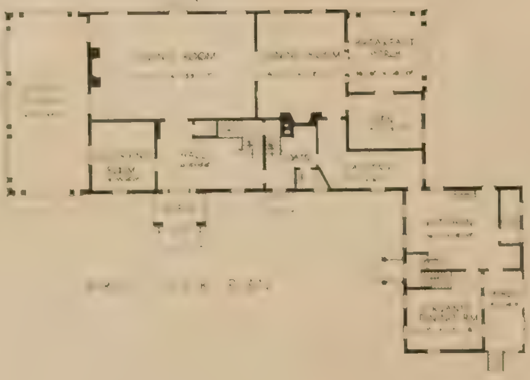


PLANS, APARTMENTS, FIFTH AVE. AND 72D ST., NEW YORK. (Plate LXVIII). J. E. R. Carpenter, Architect.

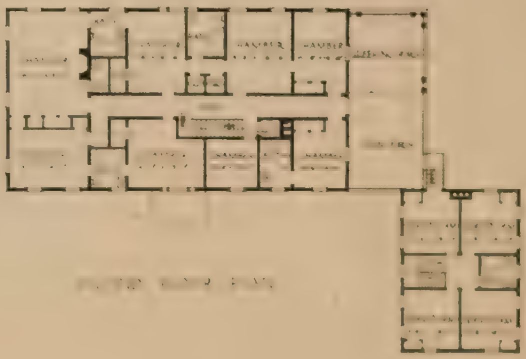


PLANS, APARTMENTS, 340-350 PARK AVE., NEW YORK. (Plate LXVII). Warren & Wetmore, Architects.



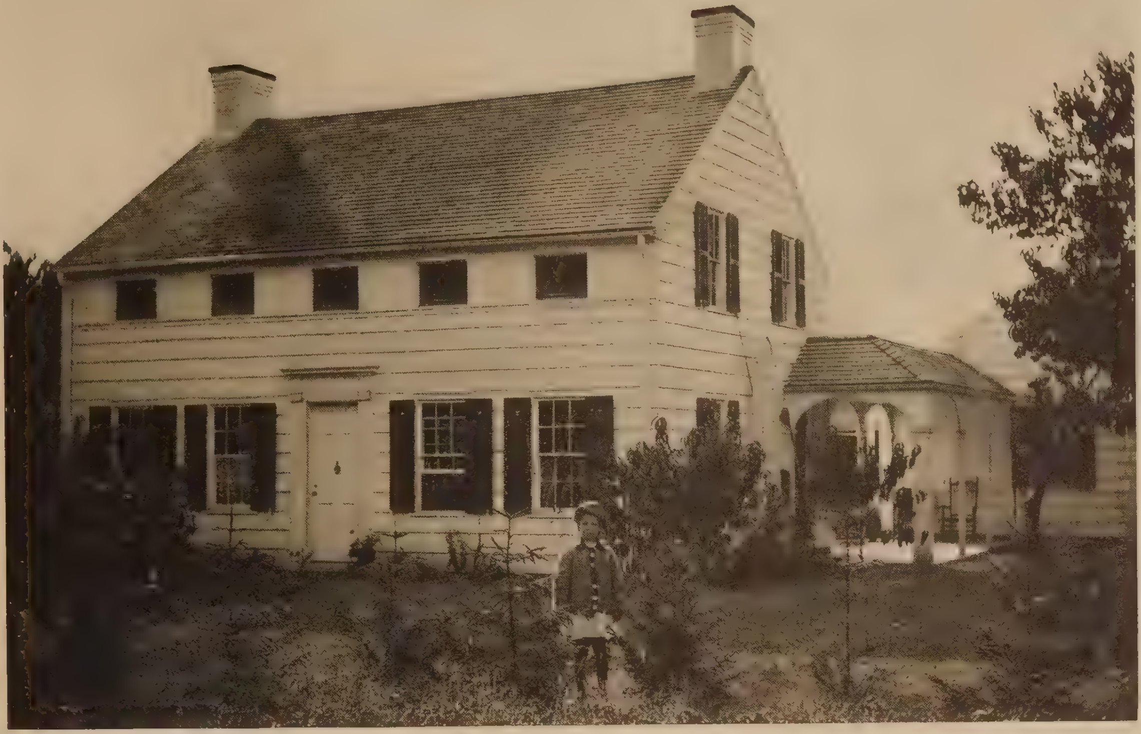


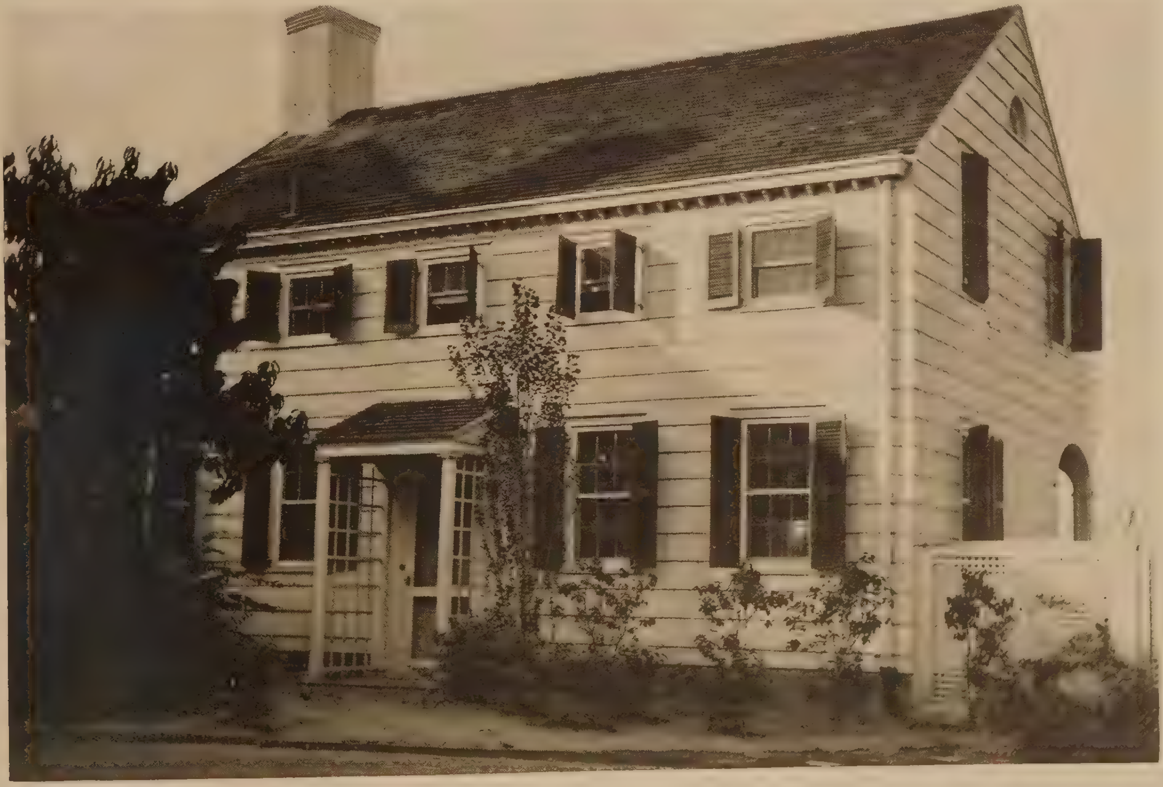
FIRST FLOOR PLAN



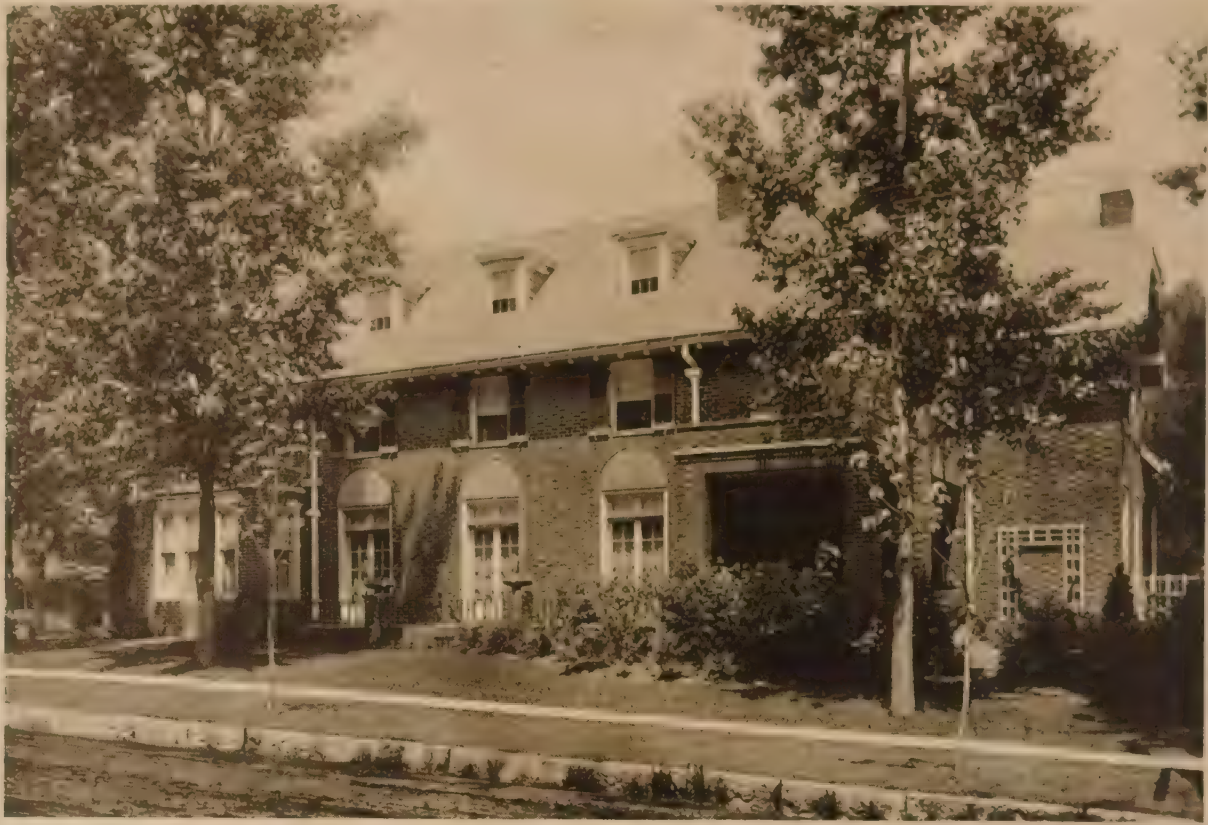
SECOND FLOOR PLAN

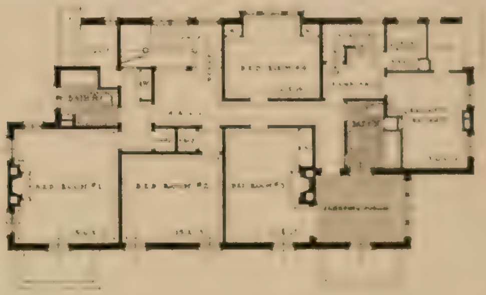
HOUSE AND PLANS, ESTATE CARLTON M. SMITH, LEWISTON, N. Y. Alfred Hopkins, Architect

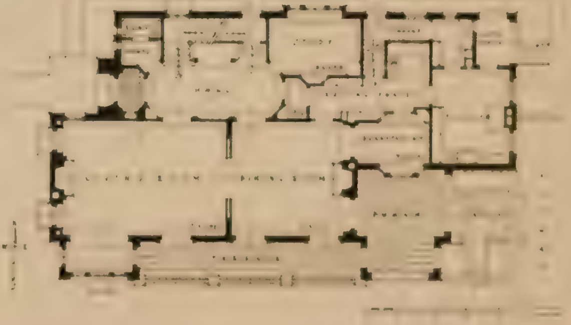




FARM COTTAGES, ESTATE CARLTON M. SMITH, LEWISTON, N. Y. Alfred Hopkins, Architect.







HOUSE AND PLANS, W. J. HENRY, AUBURN, N. Y. C. C. Tallman of Tallman & Betts, Architect

Legal Decisions of Interest to the Architect

These decisions appear monthly and are edited by Mr. John Simpson, the well-known lawyer.

INJUNCTION AGAINST ENCROACHMENT ON HIGHWAY —SPECIAL DAMAGE.

An actual encroachment by a building on a highway is a "public nuisance," and a bill by an adjacent owner to compel removal of the encroaching building is essentially a bill to abate a public nuisance by injunction. But a public nuisance does not furnish grounds for an action either at law or in equity by an individual who merely suffers an injury common to the general public.

On the other hand, an individual who sustains an injury peculiar to himself, substantial in character and differing from the injury to the general public in kind, and not merely in degree, may proceed in equity for the abatement of or an injunction against the nuisance, or maintain an action at law for damages on account of his special injury.

In a suit for injunction against an encroachment on a highway by a building, the complainant obtained a verdict in the lower court, where it was decreed that the defendant move his building back a distance measuring 4.7 feet at the northeasterly corner of the building and 8.7 feet at the southeasterly corner. This was reversed by the Rhode Island Supreme Court on appeal. The Court, reviewing the evidence, thought, in the first place, that it was extremely doubtful if it had been shown that there was any encroachment on the highway at all. Aside from this, it was not shown by the evidence that the complainant had sustained any special injury. There was nothing to show that any air or light was cut off from his premises by the alleged encroachment. The defendant's building was 40 feet from the nearest portion of the complainant's land, and upwards of 65 feet away from the nearest portion of the complainant's house. It was a one-story building, height not shown. There was no evidence that the alleged encroachment interfered in any way with the complainant's right of access to his property, and no injury to his right of view was shown.—Steere *vs.* Tucker (R. I.), 99 Atl. 583.

WAIVER OF OPERATION OF ARCHITECT'S CERTIFICATE.

A building contract provided that the contractor might be dismissed upon a certificate from the architect that the work was not being prosecuted with promptness and diligence. In an action to enforce a lien it appeared that after a portion of the work had been completed, the architect certified to the owner that the work was not being prosecuted with promptness and diligence, but the owner permitted the contractor to continue on with the work for over three months, and then dismissed him without any further certificate from the architect. It was held that the dismissal was not justified, inasmuch as the certificate, predicated, as it was, upon things as they existed at its date, could not avail after the expiration of over three months thereafter.—Bunce *vs.* Franklin O. F. H. Assn., 63 Pennsylvania Superior Court, 594.

LATERAL SUPPORT.

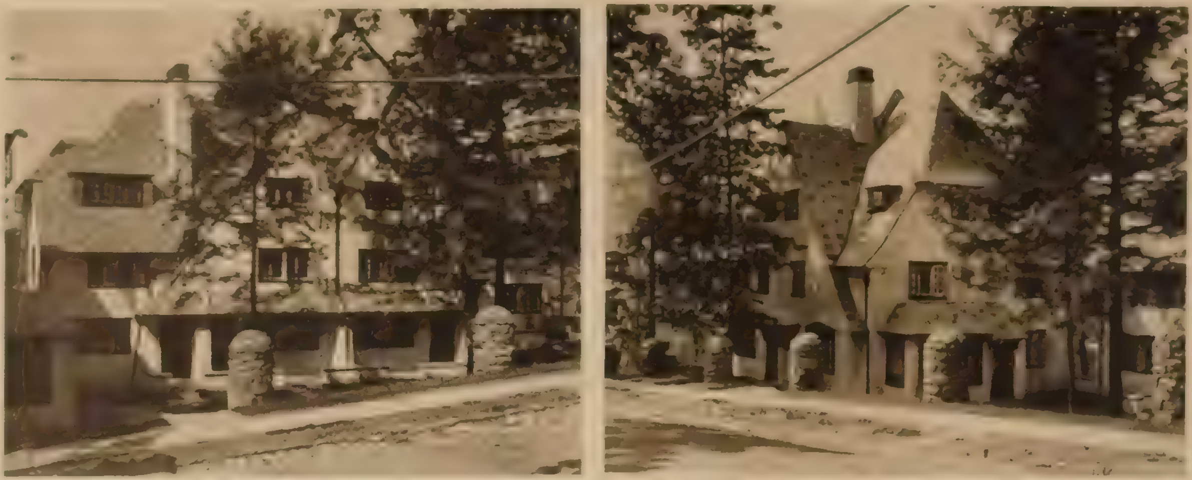
In an action for injury to goods by the fall of a wall on the premises leased by the plaintiff, caused by an excavation on the adjoining lot, brought against the owner of that lot, his architect, and his contractors, the Michigan Supreme Court held the defendants not liable for the following reasons: "It appears from the record that Dr. Polozker desired to erect a building upon his lot with a basement of the ordinary depth and character. It was a legitimate object. And in the accomplishment of his purpose he or his employees had the undoubted right to excavate the entire width of his lot, without incurring liability for injury to the adjoining building, unless, in the prosecution of the work, some duty to the owner or occupant of the building was violated. The mere fact that the excavation caused the wall of the building to fall does not establish such liability.

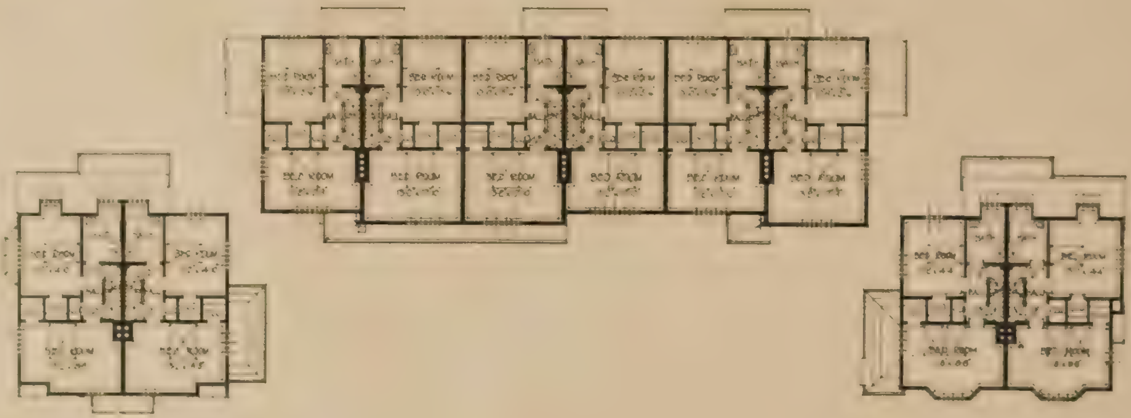
"It is clearly shown by the testimony of plaintiff's witness Decker that the wall which fell should have been underpinned as a protection against the consequences of the excavation. And it is claimed by the plaintiff that the duty of constructing such underpinning rested upon those making the excavation. In this she is mistaken. There is no evidence that the ground under the wall would have given way except for the weight of the building resting upon it. It was a clay soil, and held its place on all other sides of the excavation. By placing the wall of her building upon the line with a three-foot foundation under it the adjacent owner could not impose upon Dr. Polozker, or his employees, the burden of supporting it by an underpinning before making use of his own lot. Plaintiff, as occupant of the building, saw the work of excavation proceed day by day without taking any steps to protect her goods from possible injury. And it is to be presumed that the owner of the lot also knew that the excavation was in progress; for, if she did not, and those responsible for the excavation were guilty of any negligence in failing to notify her, the burden of proving such negligence rested on the plaintiff just the same as the burden of proving any other negligence.

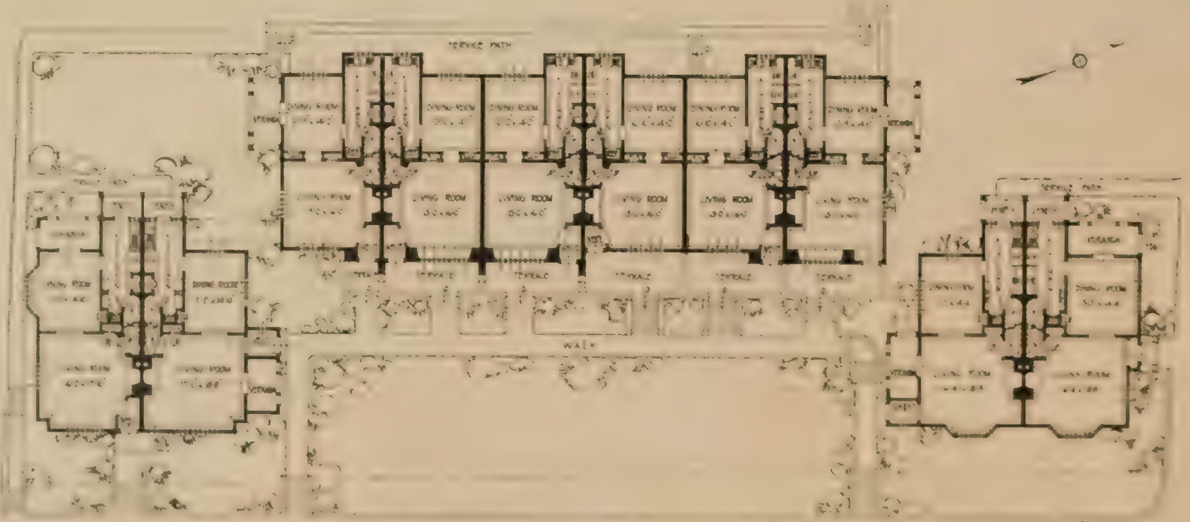
"It was also shown that the excavators permitted water from the mains in the street to run into and accumulate in the excavation. If there had been evidence to connect such accumulation of water with the falling of the wall, it might have amounted to proof of negligence; for, although the excavators were not required to furnish the labor and sustain the expense of constructing supports for the wall, yet they were bound to conduct the work of excavation with such ordinary care and skill as to avoid unnecessary injury to the building. But the evidence does not show the depth of the water next to the ground under the wall, nor that any of the ground in that vicinity was softened or gave way before the wall fell. In fact, the part of the wall that first came down was to the south of the deeper part of the excavation."—Horowitz *vs.* Blay (Mich.), 160 N. W. 438.

DISCHARGE OF SURETY.

In a building contract, the performance of which was secured by a guaranty company, provisions were included for alterations and additions, and that payments should be made in a particular way as the work progressed. Because of the inability of the contractor to meet claims and obligations as they accrued upon the work, an arrangement was entered into between the contractor and the owner, by which payments were made in a different way, but as the change in the plan of payments was made in good faith and did not result in injury to the guaranty company, the Kansas Supreme Court held that the change did not operate to relieve it from liability upon its bond.—Standard Asphalt & Rubber Co. *vs.* Texas Bldg. Co. (Kan.) 162 Pac. 299.







EXTERIORS AND PLANS, OAK COURT TERRACE COTTAGES, BRONXVILLE, N. Y. Bates & How, Architects.

Use of Streets for Moving Buildings.

The Kansas Supreme Court holds that the moving of buildings along streets is a recognized and proper use of them, and in the absence of a statutory or municipal regulation as to the manner of moving the buildings or as to the raising or removal of wires placed by a railroad or other company across streets so that buildings may be moved along the streets, the expense of raising or removing the wires to allow a building to pass, where the interference is not unreasonable and the expense is inconsiderable, should be borne by the railroad company rather than by the house mover.—Missouri Pac. K. Co. *vs.* Sprout (Kan.), 162 Pac. 293.

Right to Withhold Tools and Finish Work.

In an action claimed to be due on a contract between a contractor and a subcontractor for painting, and for the value of tools alleged to have been withheld, it was held that it would be a complete defense to an action on a contract which provided that, if the subcontractor failed to perform, the contractor might use the tools after three days' notice, and could then terminate the contract, if the painting subcontractor failed to perform, was given three days' notice, and the contractor then finished the work of painting at a cost greater than the balance due under the contract.

Although a contract for building construction required notice of termination of the contract to subcontractor to be approved by an architect, yet, if the contract provided for no architect, such approval was not essential to validate the notice.

Where a contract provided that, if the subcontractor failed to complete the work, the contractor might enter and finish it, using the subcontractor's tools, after giving three days' notice, if the contractor was justified in taking over completion of the work under the contract, refusal to surrender the tools did not constitute a "conversion."—Cohen *vs.* Frank J. Felgenhauer Co., New York Appellate Division, 162 N. Y. Supp. 306.

Indemnity Against Liability.

The West Virginia Supreme Court of Appeals holds that a bond with a condition for performance of the covenants, conditions and agreements of a building contract, due and prompt payment and discharge of all indebtedness that may be incurred by the contractors in the execution thereof, completion of the buildings free from mechanics' liens, performance of the covenants, conditions and agreements of the contract at the time and in the manner therein prescribed and payment of costs incident to enforcement of payment and collection of debts incurred by the contractors in performance of the contract, is a contract of indemnity against liability. The condition of such a bond is broken by the acquisition of a mechanic's lien on the property by a materialman, and the obligee has an immediate right of action on the bond for the recovery of the amount of the lien and the costs incident thereto, as money recoverable by action on contract.—Stuart *vs.* Carter (W. Va.), 90 S. E. 537.

Waiver of Breach of Building Contract.

A person contracted with a building company to buy a lot upon which the company was to erect a house. He paid a substantial sum on the price, took possession, and paid the balance due, giving written notice that he did not relinquish claim for damages for defective construction by making the payment. In an action against the building company to recover $2,000 as damages alleged to have been caused by the defendant's breach of its agreement to erect the house in a good and workmanlike manner, the California Supreme Court held that the plaintiff did not waive his right to such damages by taking possession. Moreover, the contract furnished good ground for the belief that no such waiver was intended. It made time of the essence, and had very stringent provisions for prompt payment and for a forfeiture of all rights of the plaintiff under it upon a breach of any of them. He was not in a safe position to refuse payment on the ground that his unliquidated damages would be sufficient to defeat or extinguish his fixed liability for the installment of the contract.—Leonard *vs.* Home Builders (Cal.), 161 Pac. 1151.

"Owner" in Mechanic's Lien Laws.

The term "owner," as used in the mechanic's lien law, does not mean the absolute owner, but merely the owner of an estate or interest which the Court may order sold. Under the Texas statute it is held by the Texas Court of Civil Appeals that a holder of a 99-year lease which required the construction of a building with power to destroy and rebuild improvements, although it made the lessee liable personally for liens, had the right to subject the property to the mechanic's lien, and his estate was subject to the lien.—Ogburn Gravel Co. *vs.* Watson Co. (Tex.), 190 S. W. 205.

Contractor's Guaranty to Subcontractor.

Where a general contractor had guaranteed the compensation of a subcontractor, and the latter had completed his work and received the architect's certificate therefor, so that the owner could not refuse to pay the general contractor, the latter cannot defend an action on the guaranty on the ground that the work was not satisfactory, though he might have a counterclaim, if properly pleaded for extra work he was required to do by the defective work of the subcontractor.—Patrizio & Hendrickson *vs.* McDermott & Hanigan, New York Appellate Divison, 162 N. Y. Supp. 302.

Construction of Building Contract.

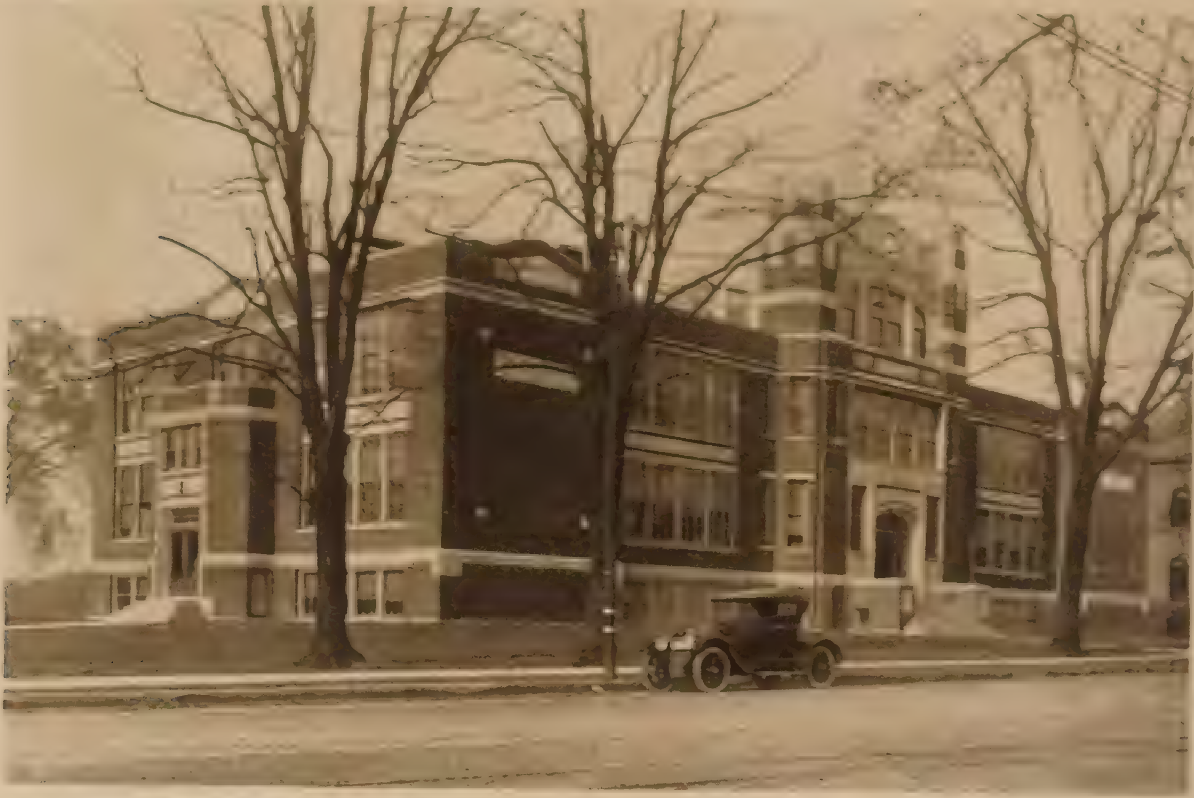
The New York Appellate Division holds that a building contract, entitling the contractor, on the subcontractor's breach, to rescind and use the tools and materials of such subcontractor, does not justify the contractor in ordering the subcontractor to cease work and using tools and materials, in the absence of breach by the subcontractor.—Israel *vs.* Burke & Sons Co., 161 N. Y. Supp. 312.

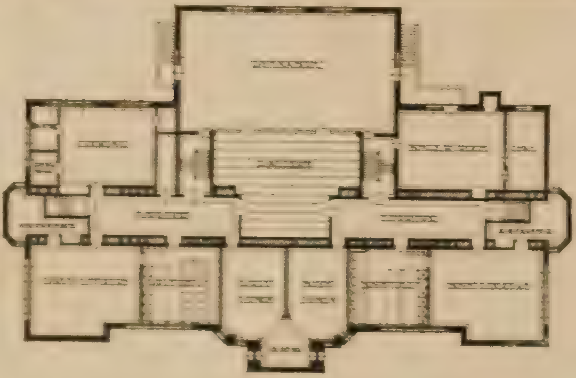
Mechanic's Liens—Accrual of Indebtedness.

For lien purposes, the date the material is put into the building determines the accrual of the indebtedness therefor as against the building, and, if no lien could be had for the material which did not become a permanent part of a finished building, the date the material which had been torn down went back permanently into the reconstructed building determined the date of the accrual of the indebtedness.—Benning *vs.* Farmers' Bank of Odessa (Mo.), 190 S. W. 983.

Mechanics' Liens.

A contractor did carpentry work under a contract embracing two buildings wholly separate and without anything in common except that they were on land purchased by the owner in a single lot and susceptible of division, and filed a certificate of lien against the entire property as a whole for the amount then due on the two buildings, though intending to claim a lien upon the two buildings, and thereafter offered to release such part of the property as was wrongfully included under the lien. The Connecticut Supreme Court of Errors held that the lien was not properly filed as to any portion of the property, and that all of it was wrongfully included so that the certificate of lien was invalid, and that the offer of release could not make it valid.—Ginsberg *vs.* Capone (Conn.), 99 Atl. 501.





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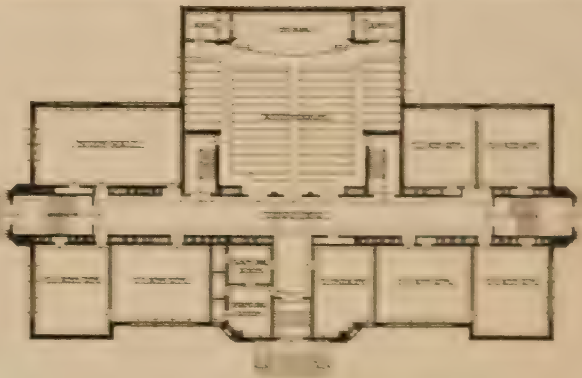

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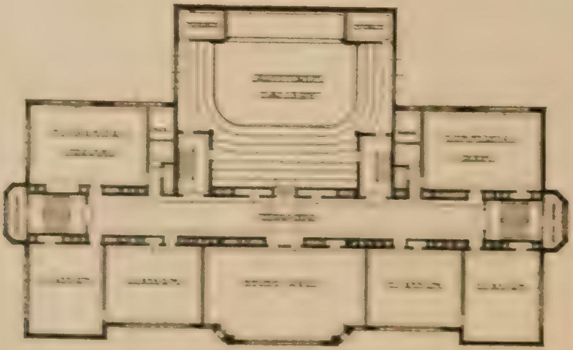
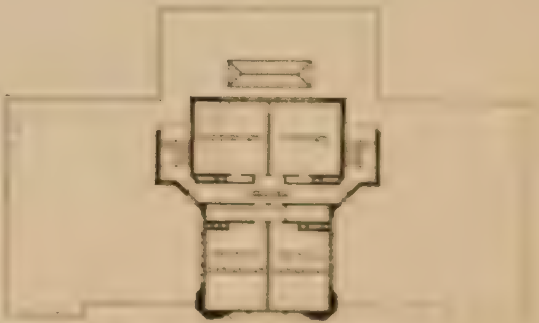
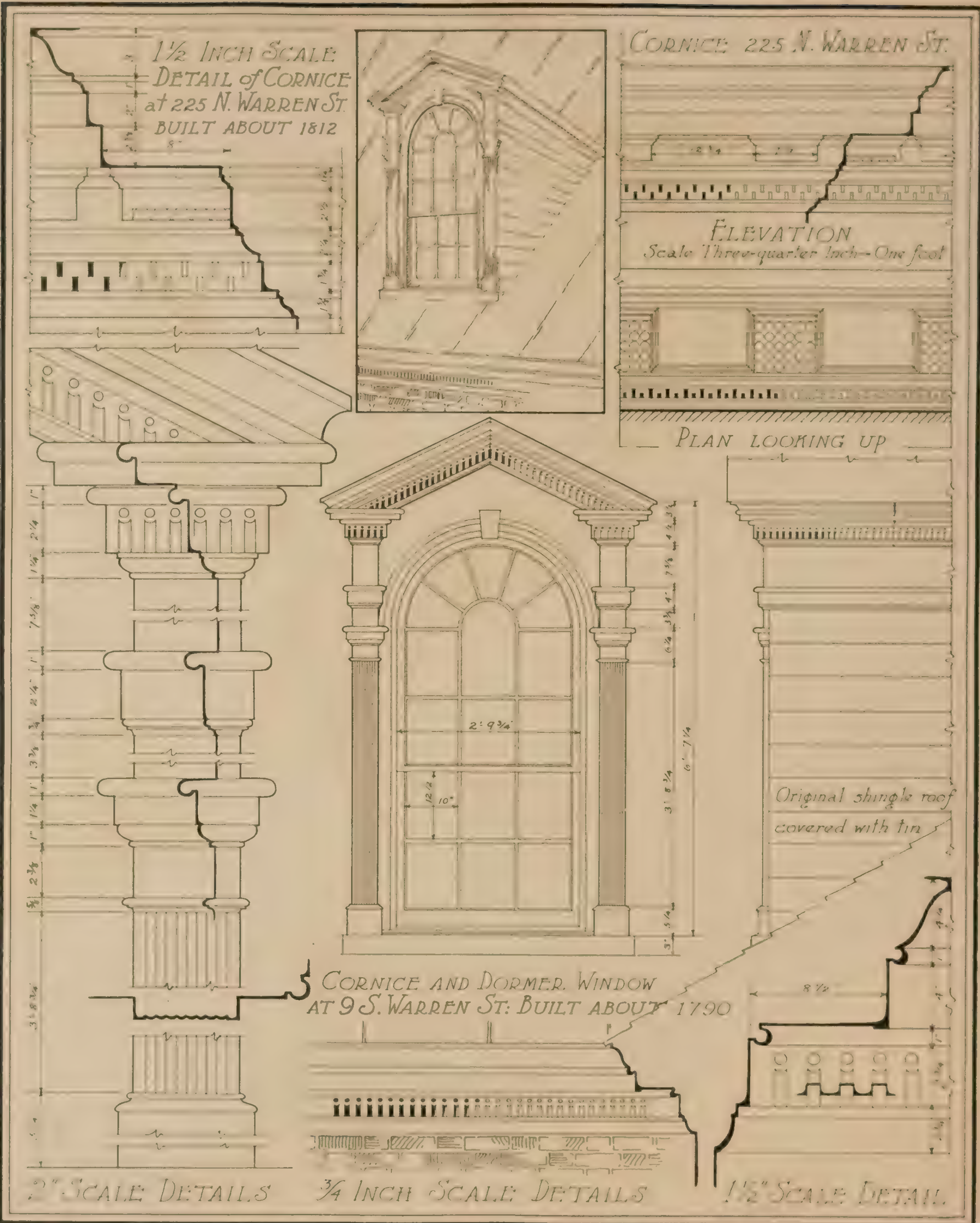


SECOND FLOOR PLAN



THIRD FLOOR PLAN

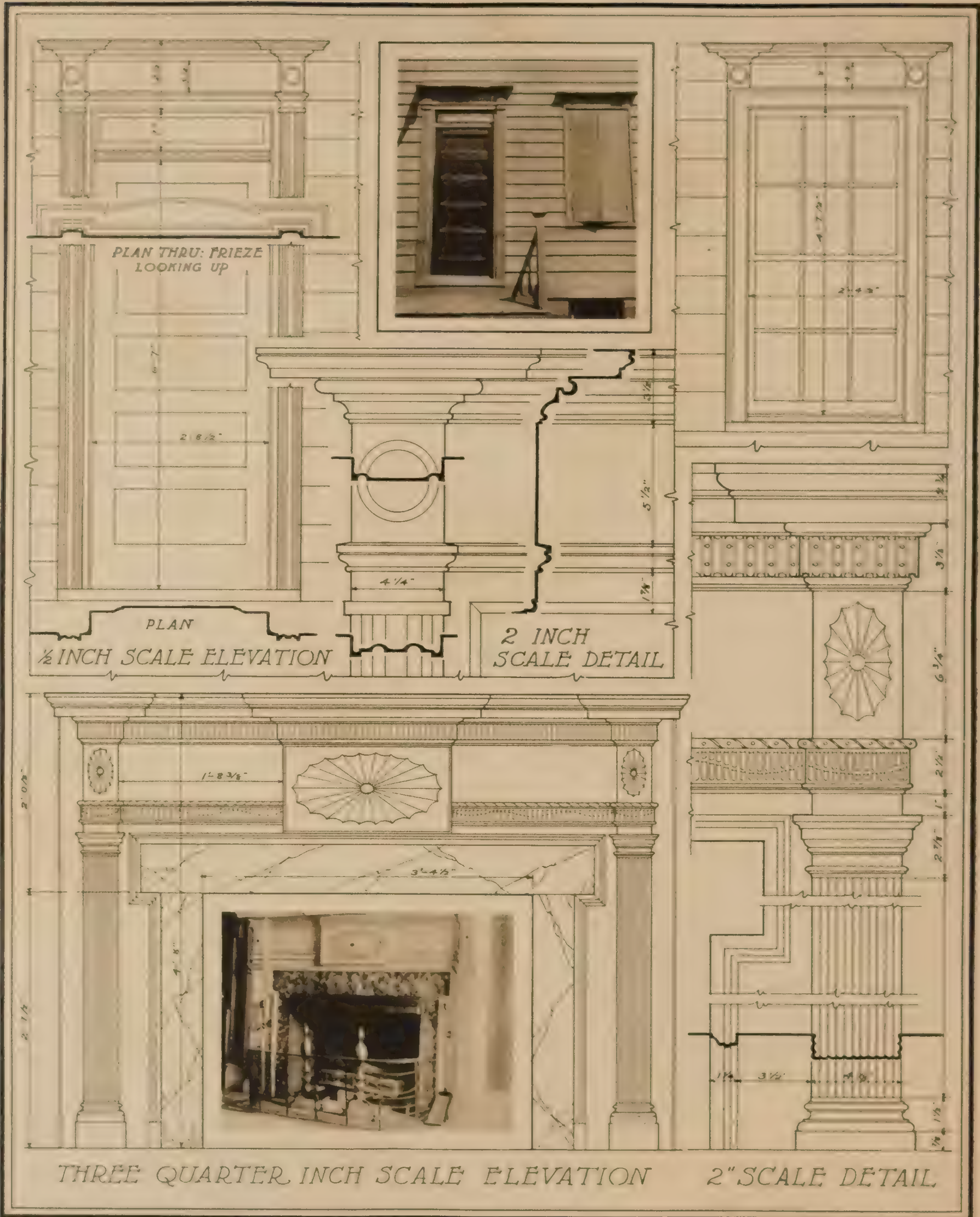
EXTERIOR AND PLANS, HIGH SCHOOL, WEST SPRINGFIELD, MASS. Malcolm B. Harding, Architect.


1½ Inch Scale Detail of Cornice at 225 N. Warren St. Built about 1812
Cornice 225 N. Warren St.
Elevation
Scale Three-quarter Inch – One foot
Plan looking up
2' 9¾"
12½
10"
3' 8¼
6' 7¼
Original shingle roof covered with tin
Cornice and Dormer Window at 9 S. Warren St: Built about 1790
8½
2" Scale Details
¾ Inch Scale Details
1½" Scale Detail

EARLY ARCHITECTURE OF NEW JERSEY

TWO CORNICES AND A DORMER AT TRENTON

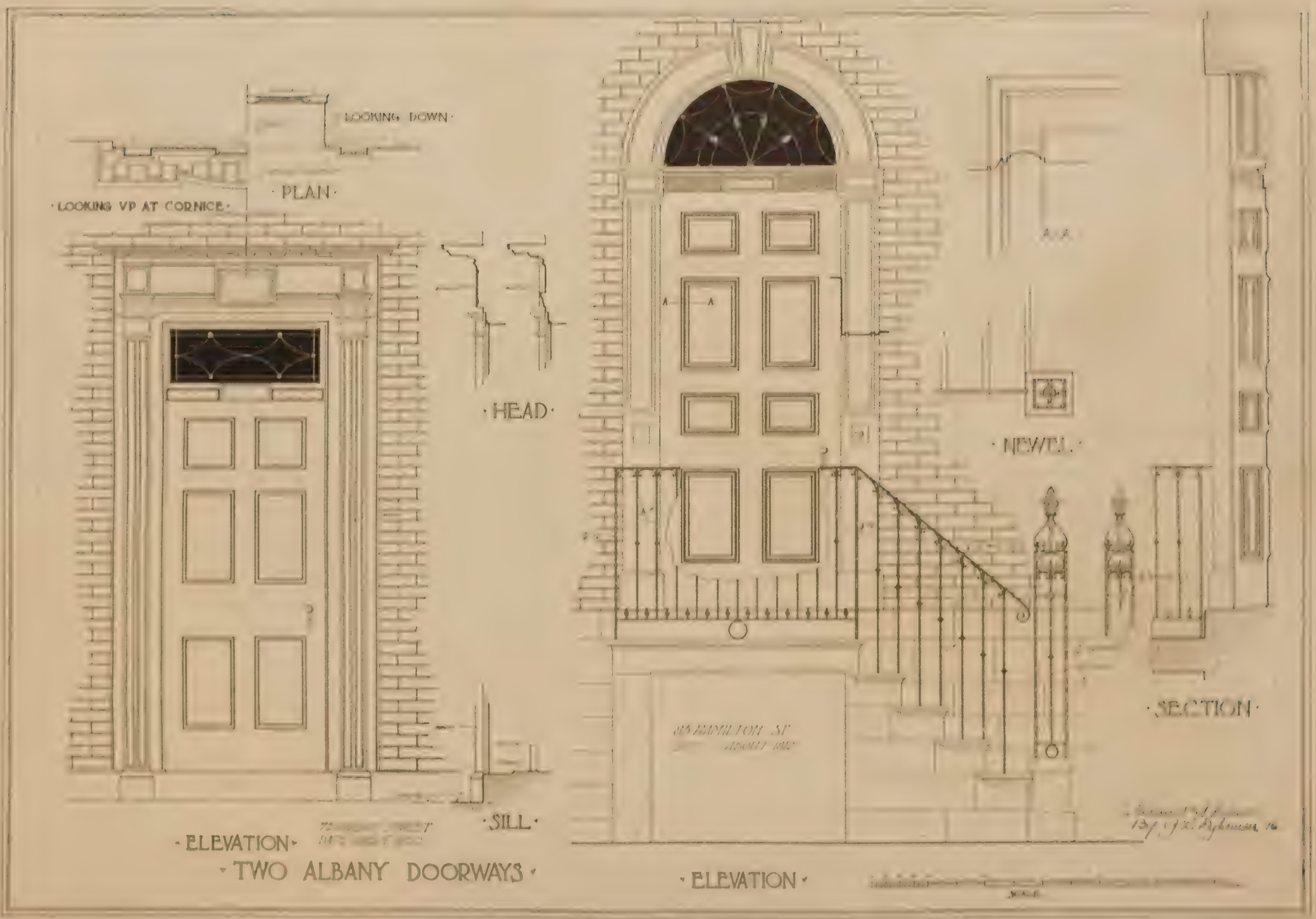
MEASURED & DRAWN BY A. E. MICKLEWRIGHT


PLAN THRU: FRIEZE LOOKING UP
PLAN
½ INCH SCALE ELEVATION
2 INCH SCALE DETAIL
THREE QUARTER INCH SCALE ELEVATION
2" SCALE DETAIL

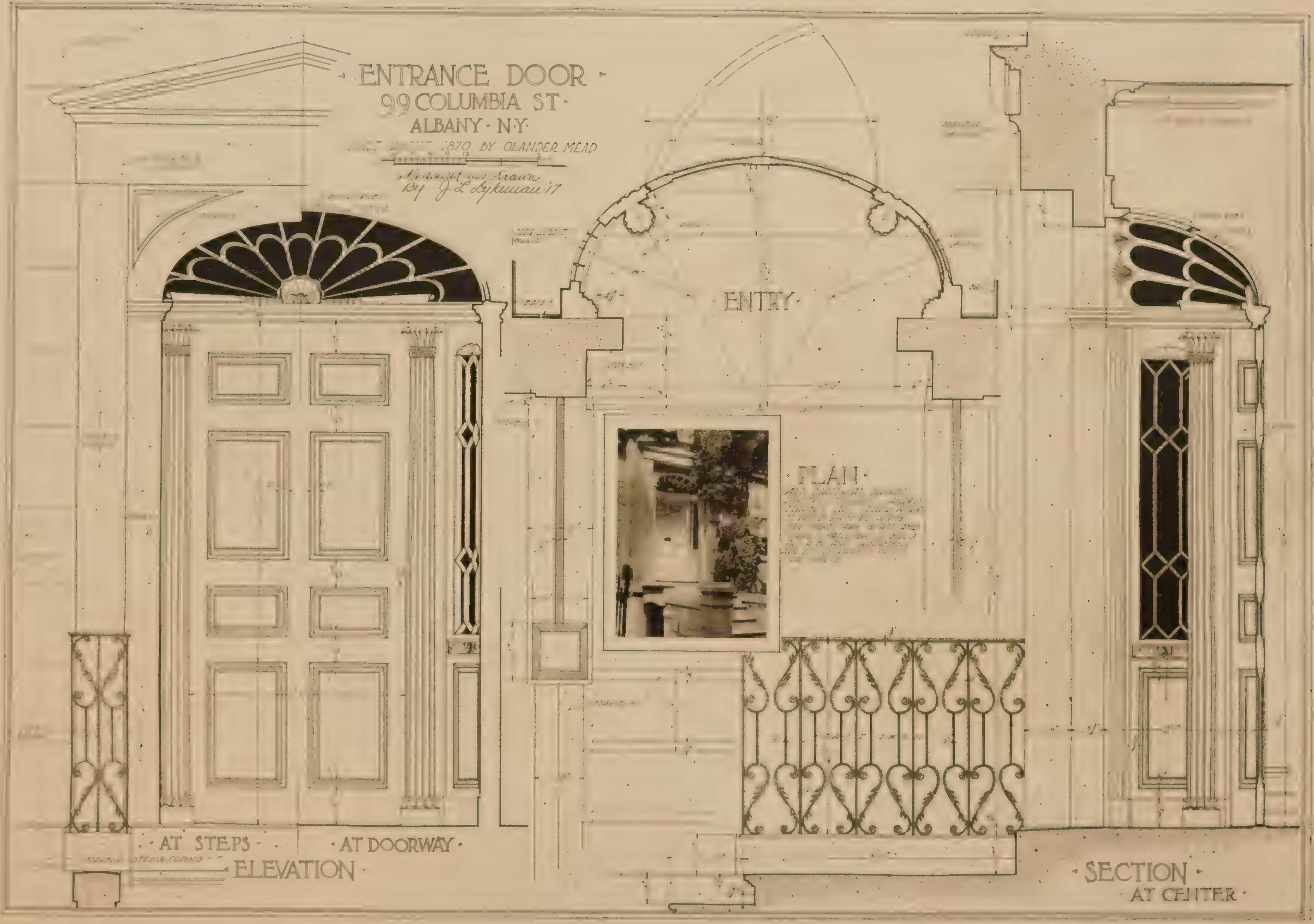
EARLY ARCHITECTURE
OF
NEW JERSEY

DOOR, WINDOW AND A MANTEL
AT TRENTON
BUILT ABOUT 1790

MEASURED & DRAWN
BY
A. E. MICKLEWRIGHT



· TWO ALBANY DOORWAYS ·



ENTRANCE DOOR
99 COLUMBIA ST
ALBANY · N·Y·
BUILT ABOUT 1820 BY OLANDER MEAD
Measured and Drawn
By J. L. Dykeman '17

ARCHITECTVRE

THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XXXV — APRIL, 1917 — No. 4

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Editorial

Planning for the Client

IT seems to be a very common impression among the people who come to architects, that as soon as the architect gets a job he is going to try to put something over on his client; that he is more or less like a child with a new suit of clothes which father has purchased for Sunday use, and sonny insists on wearing it in all sorts of weather, just to "show off," regardless of the effect on the clothes or the consequent loss to father's pocket book.

Unfortunately, there is some ground for truth in this sentiment. Architects do occasionally permit their artistic instincts to run away from their practical side and they furnish, not what the client needs in the way of a comfortable house or a good working factory, but what they think the neighborhood demands as a terminal feature of a street, or an ornament to a corner. It will rarely be found that beauty and practical considerations cannot be reconciled and in almost every instance a good working plan will permit of an exterior of good, if not of the highest, quality. Absolute freedom of limiting conditions of plan would permit the use of blank walls, or projections, wings, colonnades and other ornamental features which cannot be profitably included in the design of any specific building; yet architecture in its truest sense is final and complete acceptance of logical necessities of plan and their expression as may best be done on the exterior.

Of course, this can be carried much too far, and the client, desiring a country house, who insists that his dining room be 15′ x 19′ and his living room 17′ x 32′, and will not consent to changes of two or three feet in either one of these rooms is a very foolish person; but the architect who would desire that the two rooms be made equal in size because of some preconceived notion of exterior treatment, would be still more foolish.

Every building is the result of a series of compromises between different ideals, those of space, cost and appearance, and the successful architect is he who arrives at the most equitable balance between these factors. In many buildings too great stress is laid upon plan and too little upon exterior, since the functions of buildings are liable to change very rapidly, and as most buildings of any size are intended to permit further expansion of business, the exact arrangement of the building is determined somewhat by probable requirements as well as by actual ones. Very few people foresee just what working arrangements will eventually be necessary, and with the growth or increase in the functions housed in a structure, or even the development of these functions, the plan which begins by being ideal, ends by becoming a poor compromise; and if all exterior appearance is sacrificed to ideal present conditions, eventually the building will be entirely worthless as much from a utilitarian as from an artistic standpoint.

On the other hand, the most beautiful building possible may be so badly arranged that it can never be a good investment or a workable enterprise, and the architect who considers beauty alone will defeat his purpose to erect a monument to his own ability because the building will be remodeled and rearranged or destroyed. A notable case in this respect is the Madison Square Garden, one of the handsomest things in New York and which has so little accommodation that company after company has failed to meet running expenses and it looks as if the building would have to be destroyed, since even at the low price at which the present owners secured the property by foreclosure sale, it has no earning power.

The architect who keeps the requirements of his client firmly in his mind, is the man who succeeds best, whether his specialty be residences, commercial buildings or public buildings, and the man who in his struggle for artistic effect sacrifices vital conditions of plan, may achieve a professional success but will be unable to secure further commission for other buildings of that kind. A case in point is that of the designer of a county court house which had in combination with it the usual number of cells for the detention of prisoners. This architect neglected to make provision for a bath room for the prisoners, and in consequence they were, and still are, taken in automobiles some eighteen miles to be washed. He has produced a building of extreme beauty and which in most respects fulfills its purpose, but every county commissioner in that State has been informed of this omission and it is improbable that the architect will ever secure another building of similar type, although the appearance of the building has attracted a sufficient amount of attention to bring to this architect several commissions for private people.

Unfortunately, whether individuals or corporate bodies, clients are far less apt to recognize beauty as an asset than is the architectural profession, and the man who makes a good working court house of hideous aspect, is more apt to secure other commissions of similar type than is the man who builds a lovely but impracticable building for the purpose. Nor can the architectural profession properly complain against this fact. If architects desire to be known as a collection of artistic dreamers who spend their clients' money without regard to their clients' wishes, they cannot fairly regard the man who does not employ them as being of doubtful intelligence. If architects desire that their profession be respected, not alone for its artistic attainment, but for its capable handling of the business problems connected with it, they must produce useful as well as ornamental structures. They must see the building through the client's eyes and not through their own.

The man who speaks of a commission as *his* building and says that he was unable to do something really worth while because his client would not let him, is the man who does not deserve to have another thing to do. Every building is first and foremost the property of the client who has employed him, not alone because of his artistic training and native taste, but because of his experience in practical problems of plan and of his skill in adapting means to an end.

It is essential that the architect should be able to show the owner not only how the artistic appearance of his building may be improved, but also how he can economize space, or lay out space so that a business can be more efficiently conducted. It is not infrequent for managers of large businesses, when consulting an architect, to bring tentative layouts, often quite carefully studied, showing what they conceive to be the minimum requirements of their problems; and these tentative layouts should be treated with the utmost respect and considered, not as a childish exercise on the part of the manager, but as a definite if not a definitive, expression of his desires. It will be found that such a layout may be improved by a competent architect and very frequently improved in cases of details of purely technical nature. The tendency of the average layman is to economize space at the wrong points, as for example, in the construction of halls, passages or corridors. A good illustration of this was in a case of a large warehouse erected not long ago, to house a branch of a mail order business. The superintendent of the parent company had laid out his floor plans with care and with great intelligence as to the distribution of various departments so that the handling of goods was reduced to a minimum, but in his anxiety to economize space, he had made his corridors so narrow that the small wheeled boxes or trucks in which orders were collected, could pass only with difficulty and could not turn corners at all. The architect happened to be sensible as well as artistic, and in studying the operation of one of the older branches, discovered the loss of time occasioned by delays at corners and in passing, and his suggestion that the money spent on wider corridors would result in economy of operation was accepted instantly by the manager of the plant.

This is the sort of thing which architects should more frequently accomplish, and it is the sort of thing that clients do not habitually expect from their architects and which they can be taught by experience to expect. The good architect should be able to save his own commission in one of several ways, either because he secures better quality than an owner can secure from a contractor for the same money, or because he increases the available space by comparison with the total floor area of the building, or because he is able to arrange the unit requirements in a smaller space than either an owner or a contractor. One of these things the architect ought to be able to accomplish as well as to produce for the owner a beautiful building, and when the architectural profession accepts the fact that these functions are as truly part of their duty as is the design of a façade, the position the profession holds will be radically benefited.

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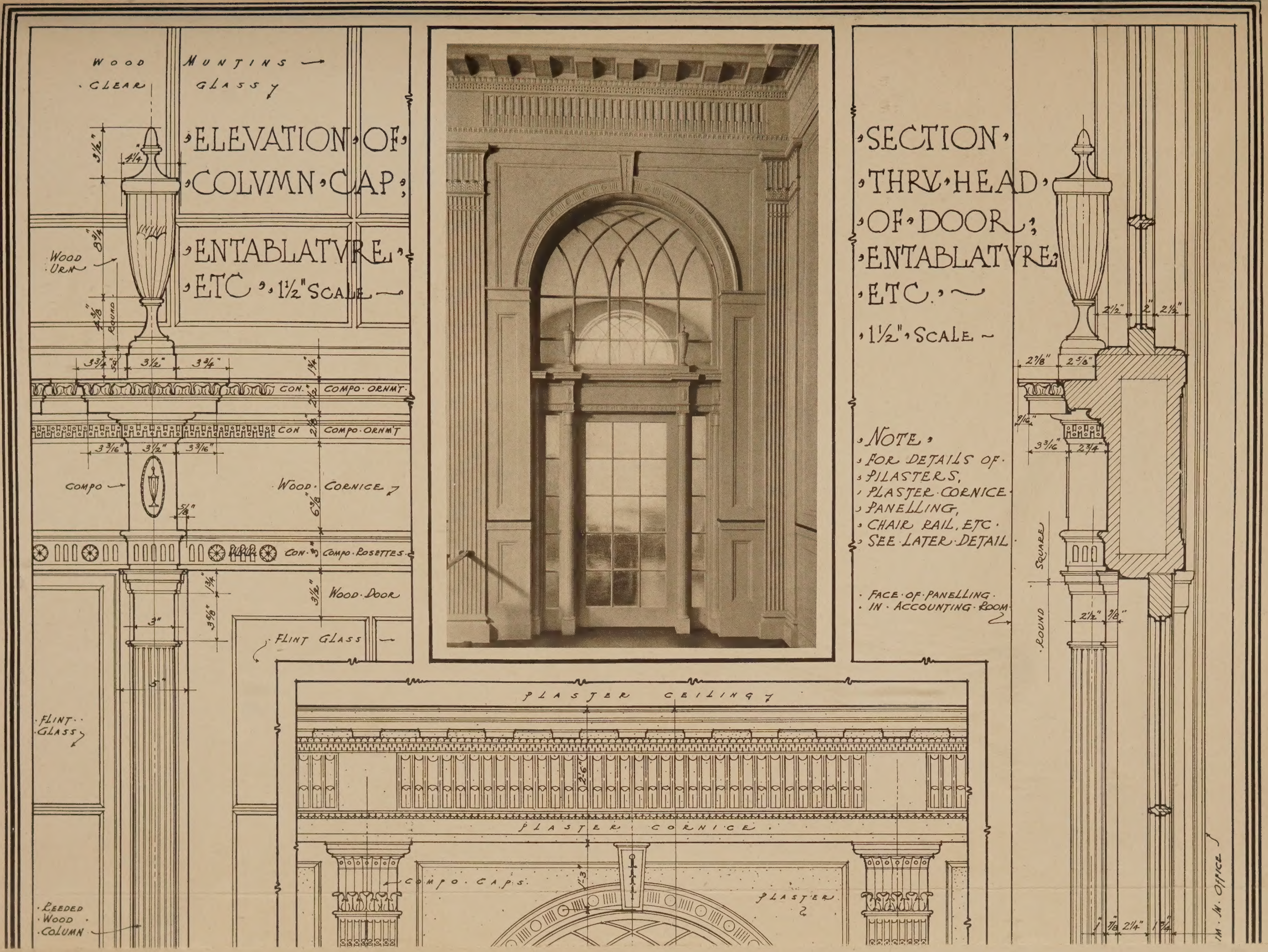

ELEVATION OF COLUMN CAP; ENTABLATURE, ETC, 1½" SCALE —

SECTION THRU HEAD OF DOOR; ENTABLATURE, ETC, — 1½" SCALE ~

NOTE,
FOR DETAILS OF
PILASTERS,
PLASTER CORNICE
PANELLING,
CHAIR RAIL, ETC.
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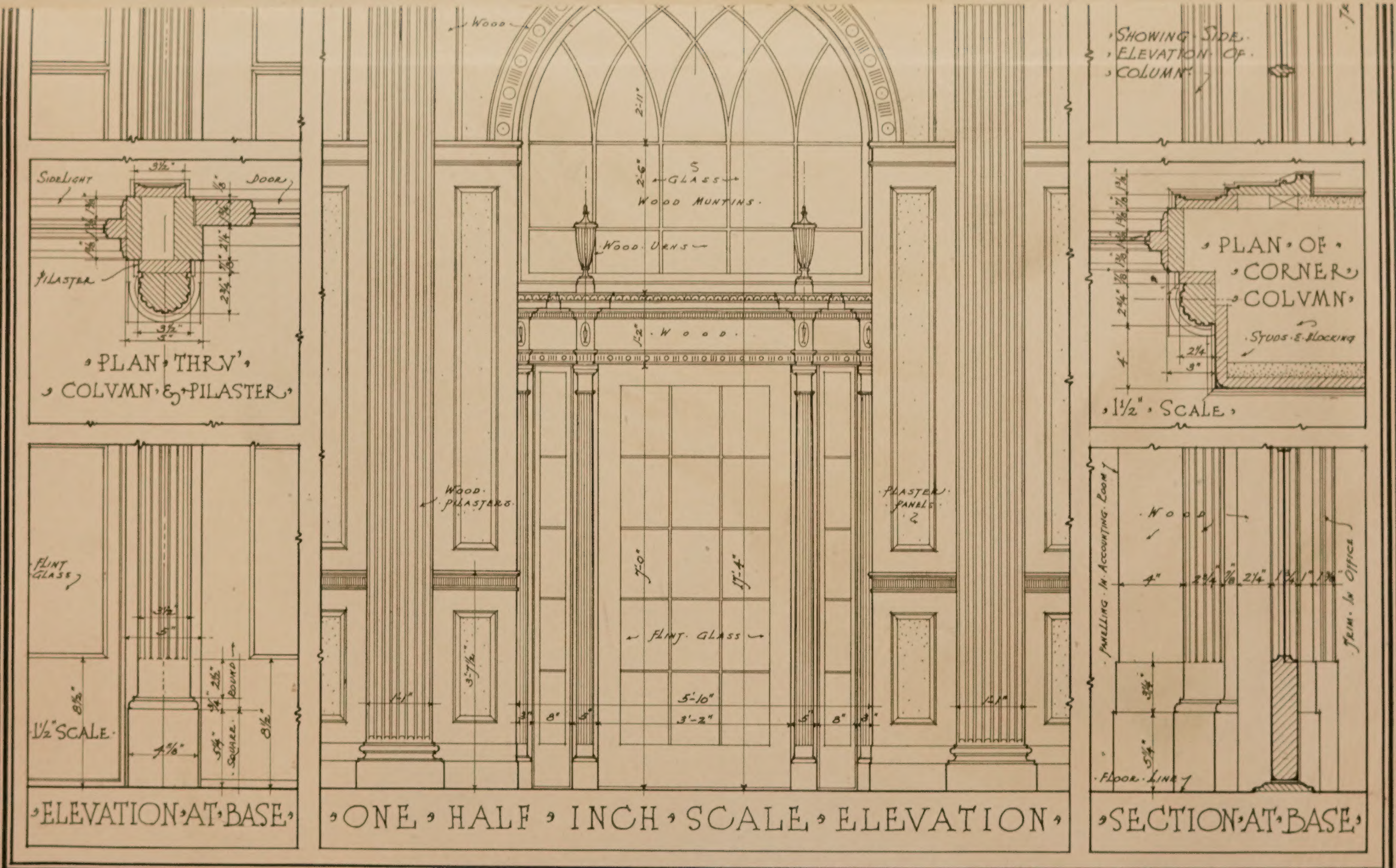

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